THE CHEMIST AND DRUGGIST

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For particulars of subscriptions, advertisements, &c., see the centre of the book.

THE MONTH

The Sale of Food and Drugs Bill passed through Committee of the House of Commons last Thursday night. In the discussion during the last month the incompetence of a great many of the analysts, and the consequent injustice to tradesmen, were freely discussed. The results of the Committee's work have been briefly these: water has been included as an article of food, thus compelling a public analyst to analyse water for his official fee, if required. Dr. Cameron's attempt to remove the word "knowingly" from the clause affecting retailers was negatived, though he was allowed to take the objectionable word from the paragraph concerning manufacturers, Mr. Sclater-Booth seeing no possibility of anyone adulterating an article *unknowingly*. An attempt made by Sir H. Peek, Mr. Pell, and others to establish analysts for counties only was resisted by Government and ultimately defeated. Dr. Playfair's amendment prohibiting the appointment of persons in trade was received with favour; but on the ground that many of the most competent analysts had been chemists and druggists, and that a sufficient supply of able professionals was not to be had, the Government declined to accede to it fully. Mr. Sclater-Booth, however, promised to introduce some words in the report which should meet the views of Dr. Playfair, who thereupon withdrew his amendment. On Tuesday last the Inland Revenue Laboratory was appointed as a body of referees in cases of disputed analyses, though this was vigorously resisted by Drs. Cameron and Playfair, representing the wishes of the public analysts generally.

At the monthly meeting of the Pharmaceutical Council on the 5th inst. a legacy of 100*l.* from the late Mr. Daniel Hanbury "for the increase of the library" was acknowledged. Professors Dragendorff, of Dorpat, and Von Trapp—the first being professor of pharmacognosy, and the second of pharmacology—were elected honorary members. We are not prepared to explain the precise distinction between these important offices. A letter from Sir J. D. Astley, M.P. for North Lincolnshire, was read, asking the Council to add to Part I. of Schedule A of the Pharmacy Act sulphuric, nitric, and hydrochloric acids, sulphates of iron and copper, and other articles of like nature, on the ground that these drugs were sometimes sold for administration to horses, to the injury of the latter. The Council, aware of the impracticability of this suggestion, could not accede to it. The hon. baronet announces his intention of rousing Parliament on the subject. Respecting the Adulteration Bill, a letter from Mr. H. G. Rogerson, of Bradford, was read and discussed. The writer, expressing his own views and those of many other chemists of the same town, urged the Council to reconsider its opposition to Dr. Lyon Playfair's amendment, which would prohibit the appointment of tradesmen to the office of public analyst. The arguments in this letter were similar to those which have already been expressed in this journal. Messrs. Hampson and Frazer advocated the views of the writer, the former explaining that a more careful examination of the question had convinced him that the principle of Dr. Playfair's amendment was just. Mr. Sandford, however, arguing that the Council had already committed itself on this subject, was of opinion that it would not do now to recede. He and other members also expressed opinions as to the suitability of pharmaceutical chemists for the office, and ultimately all the members of the Council, except Messrs. Hampson and Frazer, voted with him, pledging themselves to oppose the principle on which Dr. Playfair's amendment is based. The Glasgow memorial came on next for discussion, and Mr. Frazer, in support of it, read a long paper. Before doing so, however, an objection was raised to the admission of papers at Council meetings, but it was agreed that this one should be allowed on the understanding that it should not be regarded as a precedent. It is not certain whether a resolution will abrogate a fact. Discussion and decision on the subject was deferred to the new Council.

The report of the Pharmaceutical Council for the past year has been issued. Its most interesting feature is the extension manifest in the usefulness of the Benevolent Fund. The determination to widen the operations of this charity, so earnestly urged by Mr. Robbins and others has had the effect of considerably increasing the revenue, 915*l.* figuring as the total now, *vice* 743*l.* last year. Comparing this balance-sheet with the last we find the society has been "plunging" somewhat extensively. Last year they saved about 1,000*l.*; this year their net profit seems to reach a little less than 400*l.* The value received seems scarcely sufficient to justify this difference. Registration fees have brought in nearly 300*l.* less, and examination expenses have been more than 800*l.* more than last year. This of course accounts for the smaller balance. On the other hand, the journal has lost 100*l.* less; by the new arrangements the laboratory has cost the society only 114*l.*, instead of over 300*l.*; lectures last year cost over 600*l.*, this year they are managed for 235*l.* A hundred pounds went for the St. Petersburg deputation, and more than that amount was the extra cost for the conversazione over 1873. These are the chief points in the balance-sheet. The report mentions, as a feature worthy of notice, the falling off in the number of "pharmaceutical chemist" members. The difference is only 16, but the Council does quite right to call attention to it. The rest of the report is really nothing more than a *réchauffé* of the events of the year.

The annual general meeting of the Pharmaceutical Society is to be held at Bloomsbury Square at noon on Wednesday next, the 19th inst. The previous evening the annual dinner is to take place, Willis's Rooms being chosen this year instead of the Crystal Palace, as heretofore; tickets, one guinea each, to be obtained from Mr. Richard Bremridge, 17 Bloomsbury Square. On the evening of Wednesday, the 19th, the annual conversazione will be held at the South Kensington Museum: to this ladies as well as gentlemen are invited.

Last night, the 14th inst., the Chief Secretary for Ireland, Sir Michael Hicks-Beach introduced into the House of Commons a measure "to institute a pharmaceutical society regulating the qualifications of pharmaceutical chemists in Ireland and establishing certain relations between the Pharmaceutical Societies of Great Britain and Ireland."

The annual meeting of the Civil Service Supply Association was held on the 29th ult. The half yearly report then presented showed that sales during the preceding six months to the amount of 485,037*l.* 6*s.* 4*d.* had been effected, at a gross profit of 43,506*l.* 13*s.* 7½*d.* The working expenses were at the rate of

6*l.* 14*s.* 9*d.* per cent. on the amount of the sale. A net balance of 13,827*l.* 1*s.* 10½*d.* was the result of the half year's business. Some country members complained that they did not get so much advantage from the Association as did members resident in London, so it was resolved to allow 6*d.* in the pound, in the case of orders reaching 5*l.* or upwards, towards the cost of carriage, or if that sum would more than pay the expense, to allow so much as should defray it. The chairman (Mr. J. Fleming) mentioned that the sales showed an average increase of a thousand pounds a week over last year. An advanced honorarium was voted to the committee of management, and another attempt to introduce the system of division of profits more promptly was rejected, one of the members remarking that to go to the House of Commons and ask for a new Act would be most suicidal on their part, considering that there were so many gentlemen in that house connected with various trades who would oppose them. "Thus conscience doth make cowards of us all."

We give this month a portrait of the late Daniel Hanbury, taken from a photograph kindly lent by the family. Little remains to be added to the memoir which has already been contributed. Since its publication we have inspected various letters from his late business companions, written in terms of the warmest personal affection. The following paragraph, translated from a notice in the *Botanische Zeitung* of May 7, 1875, may prove acceptable:—"The results of these exertions, in which his noble self-forgetfulness took no less pleasure in giving than in receiving, are represented by numerous concise treatises, especially in the *Pharmaceutical Journal* since 1850, and in the Memoirs of the Linnean Society. It was given to Hanbury's untiring zeal to clear up dark points in pharmaceutical natural history, in reference to which others had exerted themselves in vain. For example, the history of Chinese medicines, styrax, frankincense and gamboge; the rarer species of cardamom, pareira brava, rhatania, and savanilla. It was reserved to him to be the first to find out the plant which for ten centuries has been well known as galanga. Since 1870 Hanbury, in union with a German friend, devoted his energy exclusively to sifting and compressing all the materials collected with incomparable ardour through so many years; and as the mature fruit appeared only five months before his decease, it is the work which above all will ensure for him lasting remembrance."

The "Glasgow memorial" has occupied a rather prominent share of pharmaceutical attention during the past month, and may come forward at the forthcoming annual meeting. A section of the Glasgow chemists are desirous of altering the examination regulations so as to allow candidates to pass a bit at a time. They also seem to wish that examinations should be held sometimes at Glasgow, and not always at Edinburgh, for Scotland. A great deal of feeling has been excited among Scotch correspondents in consequence of this memorial, but personal topics have predominated in the discussion. The Pharmaceutical Council would have done well to have taken the memorial into consideration on its first presentation, and given a prompt reply. Instead of that, they adopted the curious course of putting up Mr. Mackay to reply to it at the first meeting; next month Mr. Frazer was allowed to support; and it was then adjourned so that the new Council might begin the dispute again *ab initio*. A Scottish correspondent of ours truly remarks that the memorialists cannot possibly reply to the criticism which has been piled upon them till they hear officially from the Pharmaceutical Council.

Mr. Stanford's patent for manufacturing certain chemicals from seaweed having expired, an application for renewal was made to the Judicial Committee of the Privy Council on May 4, but refused. Their Lordships considered that 4,800*l.* in shares, which it was shown had been paid to Mr. Stanford for the right of working his invention by the British Seaweed Company, was a sufficient remuneration. This decision, which has occasioned some surprise, indicates how strong is the tendency on the part of the Privy Council against extension of patents. This is shown also by the Lord Chancellor's bill, on which we comment elsewhere. Practically, in this particular case no great injury is effected, because to compete with the present workers of the process would demand large capital and special acquirements. But the theory is suggestive. If 4,800*l.* is sufficient reward for an idea which has required fourteen years of hard work to develop, and which, according to the testimony of the Duke of Argyll, has largely benefited one of the poorest sections of the empire, how much ought an untried patent to be worth?

Mr. R. J. Moss, F.C.S., the editor of our "Corner for Students," has lately been appointed Chemical Analyst and Keeper of the Minerals to the Royal Dublin Society.

In the *Times* of May 10 we notice the death, on the 8th inst., at New Malden, Surrey, of Caroline, wife of Elias Bremridge, the esteemed secretary of the Pharmaceutical Society.

At a meeting of the *Deutsche Chemische Gesellschaft* of Berlin, held on the 26th ult., Mr. Alfred H. Mason, F.C.S., President of the Liverpool Chemists' Association, was unanimously elected a foreign member.

An assistant in one of the Glasgow shop surgeries has been sentenced to three months' imprisonment for having served strychnine in lieu of santonine, and thereby caused the death of a child.

John Murch, formerly assistant to Mr. Coker, chemist, Plymouth, received a similar term at the Plymouth Easter Session for having, on incorrect representation, induced various persons who had known him to lend him half-crowns and such like sums.

Scientific Notes.

RED MARKING INK.

To prepare this, M. Wegler[*] directs that the white of one egg should be beaten up with an equal volume of water, the mixture strained through fine linen, and mixed with finely powdered vermilion or cinnabar: this ink is used with an ordinary pen for writing on linen. When the characters are dry, a hot iron is passed over them; this coagulates the albumen, and so fixes the vermilion in the fabric that neither soap, acids, nor alkalies have any obliterating effect.

VERMILION BY THE WET WAY.

THE method given by M. Ludwig Raab[†] is as follows:—Take calomel obtained by sublimation, reduce it to a very fine powder, after which boil it with a solution of hyposulphite of sodium until transformed into black sulphide. This result obtained, decant the liquid, and wash the precipitate. Now prepare liver of sulphur by fusing pure carbonate of potassium with sulphur; dissolve the compound in water, and add to this solution the precipitated black sulphide of mercury. Heat the mixture, carefully stirring until dry. During desiccation the sulphide of mercury becomes red. After cooling, wash the mass in hot water, and finally dry.

A NEW BURETTE FOR VOLUMETRIC ANALYSES.

M. PINCHON,[‡] observing the difficulties presented by the use of ordinary burettes with such liquids as attack caoutchouc, has devised an instrument which in point of convenience and use-

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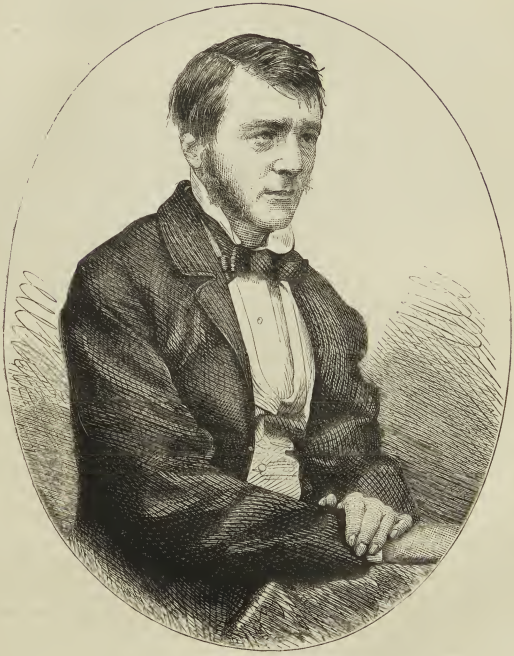
[*] *Journ. de Pharm. et de Chimie*, Mars, 1875, p. 263.
[†] *Journ. de Pharm. et de Chimie*, Avril, 1875, p. 363.
[‡] *Journ. de Pharm. et de Chimie*, Avril, 1875, p. 285.

THE CHEMIST AND DRUGGIST PORTRAIT GALLERY.

XVI.



Yours most sincerely
Dan Hanbury

THE LATE DANIEL HANBURY, F.R.S., F.L.S., F.C.S.

fulness supersedes the use of the glass stopcock generally substituted for the indiarubber tube. From a stand arise two supports of unequal height, on which the burette is inclined and firmly fixed, the upper extremity communicating, by an indiarubber tube, with a bulb of caoutchouc. The arrangement for working the burette is also fixed to the stand, and consists of a screw, traversed throughout its length by the rod of a metallic piston, the head of which just touches the bottom of the caoutchouc bulb. The end of the piston rod farthest from the bulb is furnished with a ring for the thumb of the operator, and as the piston rod works easily through the fixed screw, the application of gentle pressure suffices to expel air from the bulb through the burette. The point of the latter being now introduced into the volumetric solution to be used, on the removal of pressure from the bulb this expands and the liquid flows into the burette, filling it to zero or above. One or two turns of the screw afford a ready means of adjusting the liquid to zero. If the joints are perfect not a single drop of liquid will escape. The mode of using is obvious: by pressure on the rod any desired quantity of liquid may be expelled from the burette, and towards the close of the experiment drop after drop may be forced out by successive turns of the screw. The instrument needs to be graduated on the stand itself—the graduations being marked on the upper surface of the inclined burette.

PURIFICATION OF PHENOL.

By the following process, M. Schnitzler [*] obtains pure phenol which is not coloured by exposure to light. The phenol is converted into phenate of sodium, and heated in a copper still. Water first distils, carrying with it certain carbides and also a little phenol, the quantity of which increases in proportion to the height of the temperature. As soon as the amount of phenol distilled becomes rather large, the water appears milky; the process is then stopped. The residue is dissolved in a large quantity of water, and after standing some days various insoluble substances separate from it. The liquid is decanted, neutralised by dilute sulphuric acid, the phenol floating on the surface is removed, and distilled afresh in a glass retort. The first distillates are watery, and are rejected; pure phenol then passes over and crystallises on cooling; lastly, less volatile products are obtained, which contain foreign matters and are affected by light.

ON THE PRESERVATION OF OXYGENATED WATER.

This liquid is generally considered to be a compound of water and oxygen, which is easily decomposed, and which cannot be preserved unless it is acid. M. Bottger [†] has discovered that an oxygenated water, perfectly free from acid and specially prepared for medicinal purposes, may be preserved for many weeks, and even months, in a glass bottle closed with a cork; it may be boiled without losing its activity. If after cooling there be added to it starch paste containing iodide of cadmium and a small crystal of sulphate of iron, the re-agent will be coloured dark blue.

THE PRESENCE OF COPPER IN HUMAN ORGANISMS.

MM. Bergeron and L. L'Hôte,[‡] having found that in a case of poisoning by copper salts the whole of the copper absorbed was recoverable from the larger organs of secretion, endeavoured by a series of most carefully conducted experiments to discover if the human body contained this metal localised in the same organs. The result of the investigations, fourteen in all, were as follows:

In two subjects, aged 17 years, the copper was not estimated, but its presence was proved by yellow prussiate of potash.

In eleven subjects, aged from 26 to 58 years, the copper was estimated at a maximum of 1 milligramme, and a minimum of 0·7 mgr.

In one aged 78, copper estimated at 1·5 mgr.

To render their research complete, the livers of six fœtus were analysed, and in each case traces of copper were found. In the latter case, the presence of the metal is no doubt due to alimentation; and to the daily use of copper utensils, coin, and alimentary substances, MM. Bergeron and L'Hôte attribute the traces of copper found in the secreting organs of subjects of different ages.

ACTION OF WATER AND AQUEOUS SOLUTIONS ON BOHEMIAN GLASS.

M. P. Truchot[*] calls attention to the inconvenience attending the use of Bohemian glass beakers, &c., in chemical analysis, and especially in alkalimetry. It is well known that by boiling different solutions and oven pure water in these vessels minute quantities of silica, potash, soda, &c., are by degrees transferred from the glass to the liquid, a variation productive of great annoyance to the analyst. A proof of the changes this property of Bohemian glass is capable of effecting may be had by boiling in a beaker pure water to which is added syrup of violets coloured red by means of an acid: a few seconds after boiling the liquid will be green. The use of French glasses, of which soda forms the basis, obviates all these difficulties, as they are not sensibly attacked under similar circumstances.

ACTION OF BOILING DISTILLED WATER ON FEHLING'S SOLUTION.

MM. E. Boivin and Loiseau [†] remark that the blue colour of Fehling's solution, which is weakened on boiling with distilled water, remains unchanged if river water be employed; indeed, if ordinary water be used, the boiling liquid may be concentrated till it is nearly dry without losing its colour. The non-decolorisation of the solution is attributed to the foreign soluble bodies found in ordinary water. By a series of careful experiments, it is satisfactorily proved that the purer the distilled water used, the less is required to decolorise the solution, whilst the presence of calcium salts even in minute quantities, neutralises the decolorising power. This fact will be found of importance in estimating correctly small quantities of glucose by the Barreswill method, as in using the latter it is necessary to dilute the cupro-potassic solution with water.

ON THE STATE OF CANTHARIDINE IN VESICATING INSECTS.

M. Beguin[‡] has endeavoured, by the use of acetic ether, and also by means of chloroform, to discover the state in which the active principle of cantharides exists in those insects. After having treated a quantity of cantharides with chloroform, and extracted the cantharidine which was in a free state, he was unable by further treatment with acetic ether to obtain any additional amount. From his research he concludes that cantharidine exists in coleoptera in a free state, and not, as M. Bhun imagines, as cantharidates, for had the latter been present, the acetic ether would have dissolved them. M. Beguin concludes that either acetic ether or chloroform may be employed to extract the active principle; he gives, however, the preference to acetic ether, as proposed lately by M. Galippe.

A discussion of some interest took place at the meeting of the American Pharmaceutical Association last autumn on granular effervescent salts. Mr. Mattison, who happens to be a maker of them, read a paper with the object of showing how much superior were those of American to the originals of English manufacture. According to him, his house and one or two other firms really put citrate of magnesium in their articles; while Bishop, Bell & Co., Savory, Squire, Morson, and other eminent English firms were accused of adding Epsom salts only. Now in the first place we would remark that the addition of a little citrate of magnesium does not justify the title any more than the other; it does not make of the total product anything more than a granular effervescent citrate of soda with a fraction of citrate of magnesia in it; and, secondly, we would ask—How would Mr. Mattison account for the fact that at least one English preparation—we allude, of course, to Bishop's—is sold throughout the United States, although handicapped with a 40 per cent. import duty, while so far as we know not an ounce of this very superior American product ever finds its way to English markets, though not a penny a ton would be levied on it in the shape of Customs' duty?

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[*] *Journ. de Pharm. et de Chimie.*, Avril, 1875, p. 367; Dingler's *Polytech. Journ.*, t. ccxiv., p. 86.
[†] *Journ. de Pharm. et de Chimie*, Avril, 1875, p. 322; *Rep. für Pharm.*
[‡] *Journ. de Pharm. et de Chimie*, Mars, 1875, p. 252.

[*] *Journ. de Pharm. et de Chimie*, Mars, 1875, p. 208.
[†] *Journ. de Pharm. et de Chimie*, Mars, 1875, p. 204.
[‡] *Journ. de Pharm. et de Chimie*, Mars, 1875, p. 214.

Conducted by Richard J. Moss, F.C.S.

We purpose introducing a slight variety in the next exercise. Instead of distributing samples of sugar containing an alkaloid, we shall send samples of one of the five alkaloids—morphia, quinia, cinchonia, brucia, strychnia—in the free state or as a salt. The samples will be small, weighing only three grains each: this quantity is intended to suffice for the detection of the alkaloid, and of the acidulous radical if any is present. It will also be necessary to ascertain whether the specimen is adulterated with any other of the above-named alkaloids or not; and if it is, the adulterant is also to be named.

Students who wish to compete should send us their names and addresses before the 20th inst. On the 25th the samples will be forwarded.

Students' papers will be received up to June 15.

Answers.

The samples of sugar distributed for analysis in March contained 1 per cent. of the alkaloid brucia. There are very few complete failures to record this time, the papers received being satisfactory on the whole, although each student received very little more than half a grain of the alkaloid. The almost entire insolubility of brucia in water rendered it easy to separate it from the sugar in sufficient quantity for the application of tests, by simply dissolving the sugar in as little water as could be conveniently employed; allowing the insoluble portion to subside and afterwards carefully washing it by decantation. Of course, by employing absolute alcohol, amylic alcohol, benzol, or any liquid which dissolves brucia without affecting sugar, it was equally possible to obtain the alkaloid in a state of sufficient purity.

The recognition of brucia does not present any serious difficulty. The most characteristic reaction is the red colouration which it gives with nitric acid. This might be mistaken for the colour produced by the action of nitric acid on morphia. In both cases the colour changes to yellow on heating, but the two yellow liquids behave very differently with reducing agents, the morphia colour being bleached, while the brucia yellow becomes an intense violet. It should be observed that the red solution of brucia, in an excess of nitric acid, is decolourised by reducing agents, and that it is the yellow colour—produced by warming, or by the further addition of nitric acid—that is changed to violet by reducing agents. The red colour is best observed when brucia in the solid state is added to nitric acid; but even the small quantity of the alkaloid dissolved by cold water shows the reaction, provided a sufficiency of nitric acid is employed. The violet colour is proportionately much more intense, so that if the red colour is not observed in the cold, and the liquid becomes only slightly yellowish on warming, a marked violet colour will appear on the addition of stannous chloride. Igasuria, another of the nux vomica alkaloids, gives almost the same reactions with nitric acid; with this exception, the production of the violet colour is peculiar to brucia.

Prizes.

The First Prize has been awarded to J. Abernethy (Monad), Corn Market, Belfast.

The Second Prize has been awarded to F. Williams, junr. (F. W.), 6 Caroline Place, Belvedere, Bath.

Marks Awarded for Analyses.

Monad (1st prize)	95
F. W. (2nd prize)	93
A. H.	92
A. Weddell	92
C. C. C.	91
T. T.	91
B.	90
W. H.	90
B. Brook	89
J. N. W.	89
J. A. Halhead	88
W. W. E.	87
C. M.	85
Non Nullus	85
P. L.	83
T. B. F.	80
W. J. C.	78
Z. E. D.	30
Gravelotte	0
Minor	0
Moro	0

TO CORRESPONDENTS.

⁂ All Communications should include the names and addresses of the writers.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

T. T.—We are pleased to learn that you have derived so much benefit from the "Corner for Students." You refer to brucia as being soluble in water; you must remember that an ounce of boiling water will not quite dissolve one grain of the alkaloid, and it is much less soluble in cold water.

W. H.—The reactions in this instance were very well marked, but this is not always the case. You will find it a good plan to be a severe critic of your own work. The safest way of showing a scientific conclusion to be right is by trying to prove it wrong.

B. Brook.—The plan of making completely separate examinations for each of the alkaloids is not a good one. It is better to begin with tests applicable to two or more of the alkaloids, and reserve the special tests to advance the inferences derived from general reactions.

C. M.—You are mistaken in supposing that the mixture was entirely soluble in water; the residue left after treatment with water was quite sufficient for identification.

P. L.—About 850 parts of cold water are required to dissolve 1 part of brucia, so that except you employed an excessive quantity of water, the greater part of the alkaloid must have remained undissolved, and, as stated above, this residue should have been separately examined.

T. B. F.—You were not required to seek for the acidulous radical, for reasons that your failure will doubtless enable you to understand. The sugar is certain to have contained traces of chlorides and sulphates.

W. J. C.—Your work was conclusive so far as it went, but you will find it greatly to your advantage to carry out a more extensive examination. There is a great deal to be learned by endeavouring to exhaust a subject. The sugar employed was cane, not grape sugar.

Z. E. D.—Your paper is all about "it," but it is not clear what the "it" refers to.

Gravelotte.—The notion that strychnia was present appears to have taken a very firm hold of you, so that you confined your attention exclusively to confirming this preconceived idea. We have often pointed out the danger of such a course in chemical analysis, and the necessity for being very sceptical about results. It looks very stupid to see four pages of foolscap proving the presence of strychnia, while all the time it was brucia you were dealing with.

Minor.—Your method of separating the alkaloid from the sugar was a very bad one, as you may see by studying the behaviour of the alkaloids with ammonia.

Moro.—Dilute solutions of the alkaloids do not as a rule give satisfactory colour reactions. The nitric acid test for brucia is best applied to the solid alkaloid: a very minute quantity suffices.

G. A. Holt.—When applying for a sample you omitted to send your address.

THE HISTORY OF BLEACHING POWDER.*

By Edward C. Parnell, F.C.S.

THE ancient method of bleaching cotton and other fabrics by the influence of air and sunshine was exclusively used in Great Britain up to about 80 or 90 years ago, and is, in fact, still employed in many civilised countries. The operations involved are very simple. The goods to be bleached are laid out upon a suitable grass plot, moistened when necessary with water, and exposed in this manner to the joint action of air and sunshine for sometimes a period of three or four months.

The precise action of the air and light upon the colouring matters contained in the fabric is not known, but there is little doubt that they are oxidised more or less by the oxygen contained in the air, ozone in all probability playing an important part. The rays of sunlight also exert an independent bleaching effect, as may be observed by noting the rapidity with which coloured goods will fade on being exposed to the light, and also by the manner in which some oils are bleached by being exposed to daylight in closed glass bottles. This method of bleaching, which was very practicable a hundred years ago, when the annual turn-out of cotton goods in Great Britain was something like one five-hundredth of what it is at the present time, became gradually, as the trade increased, a serious drag upon this very important industry. The long time required for exposure and the extent of ground monopolised set a definite limit upon the amount of bleached goods that could be turned out in a given time. It is easy to understand, therefore, that very soon the attention of manufacturers and inventors was called to the importance of introducing some improvement in the operation of bleaching. We are indebted to the French chemist Berthollet for the idea of applying chlorine for this purpose. This gentleman, who was practically engaged in dyeing and bleaching operations, observed that an aqueous solution of chlorine readily bleached vegetable colouring matters. Berthollet made his experiments only a few years after chlorine had been discovered by the Swedish chemist Scheele, and as this latter experimenter had observed the bleaching power of the gas, we may perhaps say that it was due to the accidental circumstance of his not being a practical bleacher that he has not the credit of its introduction. Berthollet pursued his investigations, and was at last able to apply most successfully a solution of chlorine to the bleaching of textile fabrics on the large scale. This method was first carried out in Great Britain by the celebrated James Watt, at the bleach works of his father-in-law, at Glasgow, and after that rapidly became adopted throughout the country. The process was, however, attended with two very serious objections; the chlorine water could not easily be transported, and it consequently became necessary for each bleacher to manufacture his own gas; and further, the liquid gave off its chlorine so readily as to be almost intolerable to the workmen employed. Many attempts were made to remedy these disadvantages, and they finally resulted, in the year 1798, in the discovery by Mr. Charles Tennant, of Glasgow, that dry slacked lime would absorb more than half its weight of chlorine, giving a product known as chloride of lime, or more generally, "Bleaching Powder." It was found that this compound could be stored and transported with the utmost facility, that it readily gave off its chlorine on being treated with an acid, and on being dissolved in water gave a liquid possessing all the advantages, and none of the disadvantages, of the old chlorine solution. Mr. Tennant sold his bleaching powder at 1*s*. 6*d*. per pound, and, as you may readily suppose, made plenty of money out of it. Its present price is about 9*l*. per ton, or about 1*d*. per pound, and the value of the present annual turn out in Great Britain something like a million sterling, being about two-thirds of the total chlorine made in the world. I should mention that I am indebted to Mr. Walter Weldon for most of the above particulars and dates.

A few words here upon the manner in which the bleaching powder is applied in the bleach works may not be out of place. Cotton goods are first boiled in water, in order to remove all substances soluble in that liquid; after this they are boiled in milk of lime, which separates gluten from the fibre, and converts fatty matters, which are always present to a certain extent, into a calcareous soap. Instead of boiling with milk of lime it was at one time customary to remove the gluten by moistening the goods with water, and allowing them to remain in a pile until a species of fermentation had taken place, and the gluten thereby converted into acetic and carbonic acids; this, however, was found to be frequently objectionable, as the fermentation was apt to spread to the substance of the cloth; and also the acids produced indelibly fixed any grease stains that might have formerly existed. The goods are next placed in a hot weak solution of caustic soda: this dissolves out the calcareous soap and renders the cloth ready for the next operation—namely, that of bleaching. This simply consists in immersing it in a solution of the bleaching powder, kept slightly warm by means of steam, and then transferring it to what is termed the "acid steep," or bath of dilute hydrochloric acid: this neutralises the lime contained in the small quantity of bleaching powder adhering to the cloth, and so brings free chlorine in intimate contact with the material operated upon. Thus in at the most a few hours an operation is performed which formerly took months to accomplish, a few cubic feet are occupied where acres were covered before, and what is at all events an important point in England, the bleacher can proceed with his work quite independently of sunshine and season.

I have not before mentioned that the action of the chlorine upon the colouring matter is in most cases an oxidising one; water, which is always present, being decomposed, with the formation of hydrochloric acid.

$$H_2O + 2Cl = 2HCl + O,$$

oxygen in its nascent state acting far more powerfully than in its usual condition.

The manufacture of bleaching powder, as carried out by Mr. Charles Tennant at the commencement of the present century, received very little modification up to within the last six or seven years. The process consisted of two distinct operations: first of all, the production of the chlorine; and secondly, its absorption by hydrate of lime. The chlorine was produced by the action of hydrochloric acid upon the native mineral binoxide of manganese. On the acid being brought in contact with the mineral and heat applied, the manganese is dissolved to manganous chloride, chlorine at the same time being disengaged, the formula of the action being:—

$$MnO_2 + 4HCl = MnCl_2 + 2H_2O + 2Cl.$$

Various forms of vessels have been employed at different times for the disengagement of the chlorine; at one time vessels of iron or sheet lead were much in use, but latterly stone stills have been almost universally adopted. These are constructed of large slabs of suitable stone, carefully fitted and luted at the joints, and braced together with iron tie rods. The stills are provided with a false bottom supported three or four inches clear of the bottom of the still, and on which the mineral rests. At the top are suitable openings for admitting steam, acid, and manganese, and for carrying off the chlorine; and at the bottom is a valve for running off the solution of manganous chloride on the acid being exhausted. On the still being charged with manganese, the large opening is closed and carefully luted, and acid and steam admitted; the chlorine at once commences to be evolved, and passes off through pipes to the absorbing chamber. On a charge in the still becoming exhausted, the lower valve is opened and the waste still liquor allowed to run away; more manganese is then introduced, and the operation continued as before. The rapidity with which the manganese is dissolved and the chlorine evolved varies very considerably with different samples of the mineral; some containing a high percentage of pure binoxide of manganese, and yet only capable of being slowly acted on, while others of frequently a lower quality are found to work much better in the stills; hence it is the aim of the manufacturer to get hold of not only a rich manganese, but also of what is termed a "soft" description. The native mineral is frequently contaminated with calcium carbonate, an impurity that has to be carefully avoided; the carbonic acid contained in it passes off with the chlorine into the absorbing chamber, and takes the place of an equivalent quantity of chlorine in the resulting chloride of lime.

The pipes employed for conducting the gas from the stills to the absorbing chambers are made usually of earthenware or lead, and are sufficiently long to admit of the condensation of the small quantities of hydrochloric acid and aqueous vapour carried off with the chlorine from the still. The absorbing chambers are made either of brickwork, cast-iron plates, or sheet lead; the last being I believe now the most usual. They are generally about 6 feet deep, and vary very much in length and breadth, some being as large as 50 feet by 30 feet. They are constructed with a wooden frame-work in a manner similar to the leaden chambers employed in the condensation of sulphuric acid; and are provided with doors at the sides that can be well closed and luted, and with openings in the roof for admitting the chlorine.

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* Read at a meeting of the Liverpool Chemists' Association, April 22nd, 1875.

The lime employed for the absorption has to be of excellent quality, well burnt, carefully slacked, and finely sifted. This is spread upon the floor of the chamber to a depth of from 4 to 6 inches, and on the doors being closed and luted the gas is admitted through the roof.

The chlorine is rapidly absorbed by the lime; in fact, care has to be taken to prevent a too rapid absorption, which generates a prejudicial amount of heat, and causes the chloride of lime to decompose into a mixture of calcium chlorate and calcium chloride,

$$6CaOCl_2 = CaCl_2O_6 + 5CaCl_2.$$

After a time, when the gas ceases to be absorbed with rapidity, the chlorine in the chamber is drawn off when practicable into another one adjoining, the doors are opened, and workmen enter and turn over the lime, the object of this being to bring the whole of it in thorough contact with the gas, the doors being afterwards closed and the chlorine admitted as before. The time necessary to saturate a charge in one of the chambers varies very considerably. Sometimes this can be done in two days, while in other cases a week may be necessary to bring the bleaching powder up to the desired strength. This will be affected by the size of the chamber, the purity of the gas, and even the state of the weather, there being naturally less danger of producing the decomposition into calcium chlorate in winter than in summer. The chloride of lime, which should contain about 36 per cent. of available chlorine, has now simply to be packed in casks and is ready for the market. Of late years hydrochloric acid has been exclusively used for acting on the manganese, this acid being condensed very largely as a bye product in Leblanc's alkali process; formerly, however, when the demand for bleaching powder exceeded the demand for its equivalent quantity of alkali, the manganese was frequently acted on by a mixture of salt and sulphuric acid; in this case the residue in the still consists of mixed sodium and manganese sulphates:—

$$MnO_2 + 2NaCl + 2H_2SO_4 = MnSO_4 + Na_2SO_4 + 2H_2O + 2Cl.$$

The salt and manganese are first mixed together and placed in the still; and then sulphuric acid of a suitable strength admitted with steam in a manner similar to that already described.

The native binoxide of manganese occurs very largely in nature; it is found to some extent in England, but is principally imported into this country from Spain and Germany. The large demand for it, however, as the production of bleaching powder increased, soon caused it to rise in price; this naturally drew attention to the desirability of either recovering the manganese from the waste still liquor, or else of producing chlorine by some new method without the use of manganese at all. On referring to the formula of the action of hydrochloric acid on binoxide of manganese it will be seen that the chlorine produced is only equivalent to the oxygen in the mineral in excess of manganous oxide, or MnO; or in other words, that if we were to act upon manganous oxide with hydrochloric acid we should simply obtain a solution of manganous oxide without any chlorine being evolved:—

$$MnO + 2HCl = MnCl_2 + H_2O.$$

To recover the manganese, therefore, in a form suitable for the production of chlorine it is at all events necessary to convert it into a compound containing more oxygen than manganous oxide. It can easily be obtained in this form from solutions by adding an alkali or alkaline earth, such as lime, which will combine with the acid holding the oxide in solution:—

$$MnCl_2 + CaO = MnO + CaCl_2,$$

the manganous oxide in this case being suspended in a solution of calcium chloride. Now manganous oxide is found to absorb oxygen when this gas is brought in intimate contact with it; two methods have been adopted for effecting this, one by removing the oxide from the calcium chloride and subjecting it to a current of hot air; and another by forcing air through a solution in which the oxide is suspended. Both of these plans have been successfully carried out on a manufacturing scale, the details of which will be described later on. The attempts to produce chlorine without the agency of manganese have so far been attended with but little success. The most feasible method that has been proposed is based upon the fact that a mixture of oxygen and hydrochloric acid gas on being heated react on one another to produce steam and chlorine:—

$$O + 2HCl = H_2O + 2Cl.$$

I believe that the first patent granted in England on this subject was to Christopher Binks, in the year 1839: this patent is noteworthy from the fact of its containing the elements of both the above reactions. His improvement consisted in boiling down the mixed sulphates of sodium and manganese obtained as still liquor, when the native manganese is acted on by salt and sulphuric acid, calcining the residue with carbonaceous matter, by which means he obtains mixed sulphides of sodium and manganese, treating this with water to wash out the alkaline, and finally roasting the manganese sulphide in a reverberatory furnace so as to obtain a manganic oxide. He further on patents a method of decomposing hydrochloric acid by heating it with oxygen. Mr. Binks' name is certainly not heard of at the present time in connection with the manufacture of chlorine, so I conclude that his experiments at all events proved a commercial failure. Six years later, in 1845, a Mr. Oxland obtained a patent for decomposing hydrochloric acid, by passing it mixed with atmospheric air through a closed furnace filled with pumice stone, another very important step towards what is known as the "Deacon process." Many other patents were granted for small improvements, some of them being, as is so often the case, perfectly identical.

None of these are much worthy of note until we come to the process invented by Mr. Charles Dunlop, of Glasgow, which was adopted at the works of Messrs. Charles Tennant & Co., in 1857, and has continued to be used by them up to the present time. In Mr. Dunlop's process the still liquor is first of all treated with calcium carbonate to neutralise the free acid, and also to decompose the small quantity of ferric chloride that is always present. Calcium carbonate, under ordinary circumstances, has no effect upon solutions of manganous chloride; a double decomposition, however, takes place if the solution be raised to some temperature above 100° Centigrade, or the boiling point of water under ordinary atmospheric pressure—

$$MnCl_2 + CaCO_3 = MnCO_3 + CaCl_2—$$

To effect this decomposition Mr. Dunlop runs the manganous chloride into boilers, adds a sufficient quantity of calcium carbonate, and then boils until the necessary pressure and consequently temperature are attained. The liquid, on being drawn off from the boilers, consists of solid manganese carbonate suspended in a solution of calcium chloride. It is allowed to flow into settlers, where the manganous carbonate subsides and the supernatant calcium chloride can be drawn off. The precipitate is well washed with water to remove as much as possible of this, and is then dried and charged in little waggons, which are passed slowly through an oven in such-wise as to expose the manganous carbonate for 48 hours to a current of hot air. The result of this calcination is to drive off all the carbonic acid, and to add oxygen to the manganous oxide remaining.

The resulting black powder contains equivalent to about 70 per cent. of binoxide of manganese, which is now ready for being used over again in the stills. This very ingenious method has, however, never extended beyond the works of Messrs. Tennant, at Glasgow, and, although they are still using it there, they have lately adopted in preference the Weldon process at their new works at Newcastle-on-Tyne. To this latter process I shall now draw your attention.

Mr. Weldon's first patent seems to have been granted in the year 1866, and his process was first carried out at the works of Messrs. J. C. Gamble & Co., at St. Helen's. In the short time that has elapsed since then this method has been almost universally adopted in the large manufacturing districts of Great Britain.

I think that I am quite safe in stating that never before in the history of the alkali trade of England has a chemical invention been more quickly recognised by manufacturers, more rapidly adopted, and, at the same time, so entirely successful.

The aim of this process is similar to that of Mr. Charles Dunlop's, namely, to recover the manganese in a form suitable for being used again for the production of chlorine, but differs from it in the manner in which the manganese is raised to the higher oxide. Mr. Dunlop, you remember, effects this by heating the manganous carbonate that he obtains from the still liquor in a current of air. Mr. Weldon, on the other hand, oxidises the manganese by blowing air through a solution in which the precipitate is suspended. The details of his process are as follows:—

The impure manganous chloride is allowed to flow from the stills into a large well fitted with a mechanical agitator; on this being set in motion crushed limestone or calcium carbonate is added, the same as in Mr. Dunlop's process, to neutralise free acid and throw down iron, this being generally effected in the course of half an hour. The contents of the well are next pumped up into wrought-iron settling tanks placed at a high level, and allowed to remain undisturbed until all matter in suspension has completely subsided. The clear supernatant liquid, which shows the characteristic and beautiful rose colour of manganese salts, is next run into tall cylindrical iron vessels, termed oxidisers; these are usually about 11 feet in diameter, and about 30 feet deep, and are provided with an iron pipe for conducting air from a blowing engine to the bottom of the liquid.

The oxidiser being charged, and the blowing engine set at work, fine milk lime, as free as possible from carbonic acid, is added to the solution; this at once reacts upon the manganous chloride, producing manganous oxide in an insoluble state suspended in a solution of calcium chloride. As the blowing is proceeded with the whitish muddy liquid gradually becomes darker, and finally assumes the characteristic deep brown of binoxide of manganese. The oxidation being completed, which usually takes four or five hours, the dark liquid is run off into settlers, where, in the course of a short time, it separates into rather more than half a supernatant perfectly clear solution of calcium chloride; and the remainder, a dense black mud, usually containing about $4\frac{1}{2}$ lbs. of binoxide of manganese to the cubic foot. The solution of calcium chloride is allowed to run away and the remaining manganese mud is then ready for being acted on again by hydrochloric acid. This operation is performed in stills of stone work somewhat similar to those already described; the mud and acid are, however, allowed to run into the still simultaneously, steam being at the same time gently admitted. The action of the acid upon the fine manganese is too rapid to allow of the still being first charged with the latter as in the old process, but by the above modification an uniform and easily adjustable flow of gas can be obtained. On a charge in the still being finished the resulting manganous chloride is run off into the neutralising well, where the operations I have described are recommenced. A certain small loss of manganese takes place from defective working, and but for this the same could be used over and over again an indefinite number of times. The gas produced differs in no respect from that obtained by the old process, provided care be taken in the operations. Especial attention has to be paid to the settling of the manganous chloride before running it into the oxidiser, and also to the purity of the lime used in the latter; otherwise the chlorine obtained is apt to be contaminated with carbonic acid. The absorbing chambers are precisely similar to those already described.

Some years before Mr. Weldon appeared on the field, Mr. Gossage, of Windnes, took out a patent for recovering the manganese by a method very similar to that just described. As far as I recollect, the process consisted in precipitating the manganese with lime, as in Mr. Weldon's, and then oxidising the manganous oxide by agitating the resulting mixture in an open vessel; the particles of MnO being by this means successively brought in contact with the air above. At first sight it would seem that Mr. Weldon's improvement of blowing air down into the liquid was hardly sufficient to justify him in claiming an invention; but Mr. Weldon, in addition to this, made a very important discovery, namely, that the oxidation of the manganous oxide by injecting air through a solution in which it is suspended was immensely facilitated by the presence in the liquid of an excess of the precipitant. This discovery brought to light the existence of chemical compounds that were not known before; thus, quite independently of the fact of his having carried out his process successfully on a large scale—a very powerful argument when a matter of this sort is brought before a jury—Mr. Weldon can undoubtedly claim having introduced a reaction into his process that was formerly unknown to chemists. If precipitated manganous oxide be suspended in water and atmospheric air injected, oxygen will be absorbed, but only to the extent of forming a compound Mn_2O_3, this oxidation at the same time taking place very slowly. If, again, the manganous oxide be suspended in a solution of calcium chloride, and air admitted as before, it is found that as the oxidation proceeds the liquid gradually manifests an acid reaction, manganese at the same time appearing again in solution. If now to this an excess of lime be added so as to prevent the manganese from reappearing in solution, it is found that the oxidation not only proceeds with great rapidity but also that the manganese can be easily raised to the full binoxide MnO_2. The only way of explaining and reconciling these reactions is to admit that the MnO_2 is an *acid*, capable of forming definite compounds with bases, and in certain cases decomposing salts and taking the place of other acids. On looking into the matter it will be seen that each of the reactions just described perfectly harmonises with this theory. In the first place the fact of its being impossible to raise manganous oxide in a state of purity to a higher oxide than Mn_2O_3 can be explained by regarding this compound as a manganite of manganous oxide:—

$$Mn_2O_3 = MnOMnO_2.$$

Again, in injecting air into a solution of calcic chloride in which manganous oxide is suspended, a compound is formed, which may be termed calcium manganite—

$$2MnO + CaCl_2 + O = CaOMnO_2 + MnCl^2,$$

the latter appearing in the solution, and causing it to exhibit an acid reaction. Finally, if sufficient lime be added, this manganous chloride is decomposed, and on the blowing being continued the insoluble precipitate eventually consists entirely of calcium manganite—

$$CaOMnO_2, \text{ or } CaMnO_3;$$

the whole of the manganese being in this case raised to the state of binoxide. This, briefly described, is the chemical novelty of Mr. Weldon's process.

A few years ago Mr. Weldon took out a patent for a process similar in most respects to that just described, but in which magnesia is used instead of lime for decomposing the manganous chloride. On a solution of magnesium chloride being evaporated, before the last equivalent of water escapes, the compound is split up into magnesia and hydrochloric acid—

$$MgCl_2 + H_2O = MgO + 2HCl.$$

This is not the case when a solution of calcium chloride is treated in a similar manner. Mr. Weldon's idea was to boil down the solution of magnesium chloride, corresponding to the solution of calcium chloride that runs to waste in his former process, to calcine the residue in suitable furnaces, and to pass the escaping hydrochloric acid gas into condensing towers. He thus would obtain a large proportion of both acid and precipitant in a form suitable for being used over again. I have heard nothing, however, of this process having been successfully carried out, and conclude that subsequent experiment showed that the large amount of fuel necessary for boiling down the liquors prevented the method from being successful from a commercial point of view.

I have now described to you two methods by which the manganese can be recovered and used over again for the production of chlorine; it now remains to be seen what has been done in the other branch of investigation, namely, that of attempting to produce chlorine without the agency of manganese at all. The only method which has ever been worked on a large scale is that of Mr. Deacon, of Widnes, and is based upon the fact already mentioned that chlorine can be produced by heating a mixture of atmospheric air and hydrochloric acid gas. His novelty consisted in passing the mixed gases through a superheater, in which they were raised to the desired temperature, and then into a chamber containing marbles coated with dry sulphate of copper. It was found that this re-agent caused the mixed and heated gases, on coming into contact with it, at once to react on one another, the decomposition being much more rapid and complete than by any method that had so far been proposed. From the decomposing chamber the mixed gases are conducted into a condensing tower filled with coke in the usual manner, and down which water is falling, the object of this being to separate any hydrochloric acid that might have escaped decomposition. The remaining mixture of chlorine, nitrogen, and atmospheric air is then passed into the absorbing chambers.

On account of the small proportion of chlorine in the mixed gases, it is necessary to bring them in contact with a very thin stratum of slacked lime; for this purpose the absorbing chambers are constructed with shelves, on which the lime is placed in layers about one inch in depth, these shelves being so arranged as to allow the gases to pass over them successively from one to another. This process at first attracted a great deal of attention, and many licenses were granted for carrying it out. Unfortunately, however, it did not realise the anticipations of the manufacturers.

It would occupy too much of our time to enter into the matter of the obstacles in the way to its successful working. Briefly, however, they are the difficulty of obtaining an uniform flow of the hydrochloric acid gas; of preventing a loss of gas in the decomposing chamber, &c.; and, finally, of maintaining such diluted chlorine. Whether the process can yet be made a thorough success remains to be seen; so far, a large amount of time, labour, and money has been expended upon it with but a small return, and I fear it is gradually being abandoned.

The present annual turn out of bleaching powder in Great Britain is something like 100,000 tons, about three-fourths of which are manufactured by the Weldon process. It is exported very largely to America and the Continent, being used chiefly for bleaching textile fabrics and material for paper makers. The demand for it is steadily increasing.

SYNONYMS.

Several correspondents have favoured us with communications respecting pharmaceutical synonyms, and, considering that the subject is one of considerable interest and importance to those engaged in the elucidation of the mysteries which present themselves daily at the chemist's counter, we shall give room to as many of these contributions as we find containing any information of value.

Mr. E. P. Wright, of Golborne Road, has compiled for us from old Pharmacopœias and supplements the following alphabetical collection. We think the trade generally will value Mr. Wright's labours.

Acid elixir of vitriol	Aromatic sulphuric acid
Acid of sugar	Oxalic acid
Acidum borussium	Prussic acid
Acidum chloro-hydrargyricum	Corrosive sublimate
Acidum muriaticum	Hydrochloric acid
Acidum nitrosum (Lond. Ph., 1788)	Nitric acid
Acidum seytodephicum	Tannic acid
Acidum vitriolicum dilutum (Lond. Ph., 1788)	Dilute sulphuric acid
Ærugo	Subacetate of copper
Æther sulphuricus	Ether
Æthiops absorbens	Mercurial chalk
Alkalised mercury	,, ,,
Alumen Romanum	Roch alum
Alumen rubrum	,, ,,
Ammoniacal oxychloruet of mercury	Ammonio-chloride of mercury
Ammoniacum hydrochloratum ferratum	Ammonio-chloride of iron (Lond. Ph., 1851)
Ammoniæ hydrochloras	Chloride of ammonium
Ammoniæ murias	,, ,,
Antimoniate of potash	Antimonium calcinatum (Lond. Ph., 1788)
Antimonium diaphoreticum ablatum	Antimonium calcinatum (Lond. Ph., 1788
Antimonium oxysulphuretum	Antimonium sulphuratum
Antimonium sulphuretum aureum	,, ,,
Antimonium sulphuretum præcipitatum	,, ,,
Aqua ammoniæ (Lond. Ph., 1788)	A solution of carbonate of ammonia
Aqua Coloniensis spirituosa	Eau de Cologne
Aqua fortis (Lond. Ph., 1721)	Nitric acid
Aqua kali puri (Lond. Ph., 1788)	Liquor potassæ
Aqua naphæ	Orange-flower water
Aqua piperis Jamaicensis (Lond. Ph., 1746)	Pimento water
Aqua raphani composita (Lond. Ph., 1721)	Compound spirits of horse-radish
Aqua regia	Nitro-muriatic acid
Aquila alba	Calomel
Argol	Impure bitartrate of potash
Axungia	Hog's lard
Balsamum traumaticum (Lond. Ph., 1746)	Compound tincture of benzoin
Baume de vie	Compound decoction of aloes
Berthollet's carbonate of ammonia	Carbonate of ammonia
Bitter apple	Colocynth
Black draught	Compound senna mixture
Black drop	A strong solution of opium (U.S. Ph. 1851)
Blue copperas	Sulphate of copper
Blue ointment	Ointment of mercury
Blue stone	Sulphate of copper
Blue vitriol	,, ,,
Butter of antimony	Trichloride of antimony (Lond. Ph., 1746)
Butter of zinc	Chloride of zinc
Cacao butter	Oil of theobroma
Calamine	Impure carbonate of zinc
Calomelas (Brit. Ph., 1864)	Subchloride of mercury
Calx antimonii lota	Antimonium calcinatum (Lond. Ph., 1788)
Camphor julep	Camphor water
Caramel	Burnt sugar
Carron oil	Liniment of lime
Cauterium potentiale	Caustic potash
Ceratum epuloticum	Calamine ointment
Ceratum galeni	Cold cream
Cerussa acetata (Lond. Ph., 1788)	Acetate of Lead
Chalybeated tartar	Potassio-tartrate of iron
Chalybis rubigo præparatus (Lond. Ph., 1746)	Hydrated peroxide of iron
Chloramide of mercury	Ammonio-chloride of mercury
Chloric ether	Spirit of chloroform
Cibus deorum	Assafœtida
Cinnabar of antimony	Sulphuret of mercury
Citrine ointment	Ointment of nitrate of mercury
Coagulated mercury	Red oxide of mercury
Comitissæ palmæ pulvis	Carbonate of magnesia
Commander's balsam	Compound tincture of benzoin
Compound tincture of Benjamin	,, ,, ,,
Confectio amygdalæ	Compound almond powder
Confectio aromatica	Aromatic chalk powder
Confectio cardiaca	,, ,, ,,
Confectio damocratis	A compound confection of catechu
Confectio Raleighana	Aromatic confection
Conserva amygdalarum	Compound almond powder
Conserva cynosbutæ	Confection of canine rose
Corrosive sublimate	Perchloride of mercury
Cosmetic mercury	Ammonio-chloride of mercury
Cream of tartar	Acid tartrate of potash
Crocus Martis astringens (Lond. Ph., 1721)	Hydrated peroxide of iron
Distilled verdigris	Acetate of copper
Donovan's solution	Liquor Arsenici et hydrargyri hydriodatis (Lond. Ph.)
Dover's powder	Compound ipecacuanha powder
Drago mitigatus	Calomel
Electrum	Amber
Electuarium caryocostinum (Lond. Ph., 1721)	A confection of scammony
Elixir aloës (Lond. Ph., 1746)	A tincture of aloes and myrrh
Elixir paregoricum (Lond. Ph., 1746)	Compound tincture of camphor
Elixir salutis (Lond. Ph., 1721)	Compound tincture of senna
Elixir of Vitriol	Aromatic sulphuric acid
Emulsio communis (Lond. Ph., 1746)	Mistura amygdalæ
Essentia bina	Burnt sugar
Ethiop's mineral	A mixture of equal parts of mercury and sulphur
Extractum catharticum (Lond. Ph., 1746)	Compound extract of colocynth
Extractum thebaicum (Lond. Ph., 1746)	Extract of opium
Ferri oxidum nigrum	Magnetic oxides of iron
,, peroxidum (Brit. Ph., 1864)	Hydrated peroxide of iron
,, peroxidum hydratum (Brit. Ph., 1864)	Humid peroxide of iron
,, rubigo (Lond. Ph., 1788)	Hydrated peroxide of iron
Ferrocyanide of potassium	Yellow prussiate of potash
Ferrum ammoniatum (Lond. Ph., 1809)	Ammonio-chloride of iron
,, ammoniacale (Lond. Ph., 1788)	,, ,, ,,
,, tartarizatum (Lond. Ph. 1824)	Potassio-tartrate of iron
Fleming's tincture of aconite	A tincture of aconite six times as strong as P. B.
Flores benzoës (Lond. Ph., 1788)	Benzoin acid
,, benzoini (Lond. Ph., 1746)	,, ,,
,, martiales (Lond. Ph., 1746)	Ammonio-chloride of iron
,, salis ammoniaci martiales (Lond. Ph., 1721)	,, ,, ,,
Flowers of zinc	Oxide of zinc
Fluid magnesia	Solution of carbonate of magnesia
Fossil alkali	Carbonate of soda
Fowler's solution	Liquor arsenicalis
Friar's balsam	Compound tincture of benzoin
German tinder	Amadou
Glauber's salt	Sulphate of soda
Goulard's extract of lead	Solution of subacetate of lead
Goulard powder	Acetate of lead
,, water	Diluted solution of subacetate of lead
Green copperas	Sulphate of iron
,, vitriol	,, ,,
Gregory's mixture	Compound rhubarb powder
,, powder	,, ,, ,,
Griffith's green mixture	Compound iron mixture of Lond. Ph.
Hepar sulphuris (Lond. Ph., 1721)	Sulphuret of potash
Hiera logadii	A confection of aloes and canella
,, picra	Powder of aloes and canella
Hoffman's anodyne spirit	Spirit of ether
Homberg's sedative salt	Boracic acid
Huxham's tincture of bark	Compound tincture of bark
Hydrargyri biniodidum	Red iodide of mercury
,, nitratis ruber (Lond. Ph., 1788)	Red oxide of mercury
Hydrargyri nitrico-oxidum	,, ,, ,,

Hydrargyri oxymurias (Lond. Ph., 1824)	Corrosive sublimate
Hydrargyri submurias (Lond. Ph., 1824)	Calomel
Hydrargyrum corrosivum sublimatum (Brit. Ph., 1864)	Perchloride of mercury
Hydrargyrum bichloridum	Perchloride of mercury
Hydrargyrus calcinatus (Lond. Ph., 1788)	Red oxide of mercury
Hydrargyrus muriatus mitis (Lond. Ph., 1788)	Calomel
Hydrargyrus muriatus (Lond. Ph., 1788)	Corrosive sublimate
Hyperoxymuriate of potash	Chlorate of potash
Ioduret of potassium	Iodide of potassium
Jesuits' drops	Compound tincture of benzoin
Kali causticum (Dubl. Ph., 1807)	Liquor potassæ
,, præparatum (Lond. Ph., 1788)	Carbonate of potash
,, purum (Lond. Ph., 1788)	Caustic potash
,, stibicum	Antimonium calcinatum (Lond. Ph., 1788
,, tartarizatum (Lond. Ph., 1788)	Tartrate of potash
,, vitriolatum (Lond. Ph., 1788)	Sulphate of potash
Lac ammoniaci (Lond. Ph., 1788)	Ammoniacum mixture
,, amygdalæ (Lond. Ph., 1788)	Almond mixture
Lapis amianthus	Asbestos
,, divinus	A fused mixture of equal parts of sulphate of copper, nitrate of potash and alum, with a little camphor
,, infernalis	Fused nitrate of silver
,, infernalis alkalinus	Caustic potash
,, infernalis sive septicus (Lond. Ph., 1721)	,, ,,
Laudanum	Tincture of opium
Lavender Drops	Compound tincture of lavender
Lenitive electuary (Lond. Ph., 1746)	Confection of prunes
Liquor plumbi diacetatis	Solution of subacetate of lead
,, potassæ arsenitis	Liquor arsenicalis
Lithargyrum	Oxide of lead
Liver of sulphur	Sulphuret of potash
Lixivium saponarium (Lond. Ph., 1746)	Liquor potassæ
Lunar caustic	Fused nitrate of silver
Magistery of bismuth	Subnitrate of bismuth
Magnesia (Lond. Ph., 1851)	Calcined magnesia
,, alba (Lond. Ph., 1788)	Carbonate of magnesia
Manna metallorum	Calomel
Martial æthiops	Magnetic oxide of iron
Mel acetatum (Lond. Ph., 1788)	Oxymel
Mercurius calcinatus (Lond. Ph., 1746)	Red oxide of mercury
,, corrosivus albus (Lond. Ph., 1746)	Corrosive sublimate
,, corrosivus ruber (Lond. Ph., 1746)	Red oxide of mercury
,, dulcis præcipitatis	Calomel
,, dulcis sublimatus	,,
,, præcipitatus albus (Lond. Ph., 1746)	Ammonio-chloride of mercury
,, præcipitatus corrosivus (Lond. Ph., 1721)	Red oxide of mercury
,, sublimatus corrosivus (Lond. Ph., 1721)	Corrosive sublimate
Mindererus's spirit	Solution of acetate of ammonia
Minium	Red oxide of lead
Mistura camphora	Camphor water
Murias hydrargyri corrosivus (Edin. Ph., 1839)	Corrosive sublimate
Naphtha aceti	Acetic ether
,, vitrioli	Sulphuric ether
Natron vitriolatum (Lond. Ph., 1788)	Sulphate of soda
Neapolitan ointment	Mercurial ointment
Nitrate of bismuth	Subnitrate of bismuth
Nitre	Nitrate of potash
Nitrum flammans	Nitrate of ammonia
,, præparatum (Lond. Ph., 1788)	Carbonate of soda
,, semi-volatile	Nitrate of ammonia
,, vitriolatum (Lond. Ph., 1746)	Sulphate of potash
Oil of Grain	Fusel oil
,, Mace	Expressed oil of nutmeg
,, Male fern	Liquid extract of male fern
,, Swallow	Oil of elder
,, Tar	Creosote
,, Vitriol	Sulphuric acid
Oleum ammoniatum (Edin. Ph., 1839)	Ammonia liniment
,, Bubulum	Neats'-foot oil
,, Camphoratum (Edin. Ph., 1839)	Camphor liniment
,, Florum chamomeli (Lond. Ph., 1721)	Oil of Chamomile
,, Nervinum	Neat's-foot oil
,, Omphacinum	Inferior olive oil
,, Vini (Lond. Ph., 1788)	Etherial oil
,, Viride	Oil of elder
Opium colatum (Lond. Ph., 1746)	Extract of opium
,, Purificatum (Lond. Ph., 1788)	,, ,,
Opodeldoc	Soap liniment
Orpiment	Trisulphuret of arsenic
Oxydum ferroso ferricum	Magnetic oxide of iron
,, Hydrargyri rubri per-acido nitrico (Edin. Ph., 1839)	Red oxide of mercury
Oxymuriate of potash	Chlorate of potash
Panchymagogum minerale	Calomel
Paregoric elixir	Compound tincture of camphor
Pellitory of Spain	Radix pyrethri
Phenic acid	Carbolic acid
Pil. galbani comp.	Compound assafœtida pill
Pill cochia	A pill of colocynth and aloes
Pilulæ e gummi (Lond. Ph., 1788)	A compound galbanum pill
Pilulæ rufi	Pill of aloes and myrrh
Potassæ antimonias	Antimonium calcinatum (Lond. Ph., 1788)
,, Bitartras	Acid tartrate of potash
Potio carbonatis calcis (Edin. Ph., 1839)	Chalk mixture
Prepared sulphuret of antimony	Black antimony
Pulvis ipecacuanhæ opio	Compound ipecacuanha powder
Pulvis kino co. opio (Brit. Ph., 1864)	Compound kino powder
Pulvis opiatus (Edin. Ph., 1839)	Compound chalk powder with opium
Quevenne's iron	Ferrum redactum
Red lavender drops	Compound tincture of lavender
Regulus of antimony	Antimony
Rochelle salt	Potassio-tartrate of soda
Rochi gallis	Rock alum
Roman vitriol	Sulphate of copper
Rufus' pill	Pill of aloes and myrrh
Sabadillin	Veratria
Sacchari fœx	Theriaca
Sal ammoniac	Chloride of ammonium
,, Anglicum	Sulphate of magnesia
,, Catharticum	,, ,,
,, Catharticus Glauberi (Lond. Ph., 1747)	Sulphate of soda
,, Diureticus (Lond. Ph., 1746)	Acetate of potash
,, de Duobus	Sulphate of potash
,, Enixum	Bisulphate of potash
,, Gemmæ	Rock salt
,, Mirabilis Glauberi	Sulphate of soda
,, Mirabile perlatum	Phosphate of soda
,, Polychrestum	Sulphate of potash
,, Polychrestum seignette	Potassio-tartrate of soda
,, Prunella	Fused nitrate of potash
,, Rupellensis	Potassio-tartrate of soda
,, Sedativum Hombergi	Boracic acid
,, Succini	Succinic acid
Salt of tartar	Carbonate of potash
,, Wormwood	,, ,,
Saltpetre	Nitrate of potash
Scott's ointment	Compound ointment of mercury
Soapstone	French chalk
Sodæ carbonas (Lond. Ph., 1824)	Bicarbonate of soda
Solutio solventis mineralis	Solution of chloride of arsenic (Lond. Ph.)
Spathum ponderosum	Sulphate of baryta
Species diatragaranthæ frigidæ (Lond. Ph., 1721)	Compound tragacanth powder
Spirit of mindererus	Solution of acetate of ammonia
,, Sal volatile	Aromatic spirit of ammonia
Spiritus ammonia compositus	,, ,, ,,
,, Lavandulæ compositus	Compound tincture of lavender
,, Nitri dulcis (Lond. Ph., (1746)	Spirit of nitric ether
,, Nitri Glauberi (Lond. Ph., 1746)	Nitric acid
,, Raphani compositus (Lond. Ph., 1788	Compound spirit of horse-radish
,, Salis (Lond. Ph., 1721)	Hydrochloric acid
,, Salis ammoniaci (Lond. Ph., 1746)	A solution of carbonate of ammonia
,, Salis marini Glauberi (Lond. Ph., 1746)	,, ,, ,,
,, Vitrioli tenuis (Lond. Ph., 1746)	Dilute sulphuric acid
,, Volatilis aromaticus (Lond. Ph., 1746)	Aromatic spirit of ammonia
,, Volatilis fœtidus (Lond. Ph., 1746)	Fœtid spirit of ammonia
Steatite	French chalk
Steel drops	Tincture of perchloride of iron
Stercus diaboli	Assafœtida
Subcarbonate of potash	Carbonate of potash
Succus cicutæ spissatus (Lond. Ph., 1788)	Extract of hemlock
Sugar of lead	Acetate of lead
Sydenham's laudanum	Opium wine
Syrupus balsamicus (Lond. Ph., 1746)	Syrup of tolu
,, papaveris erratici (Lond. Ph., 1788)	Syrup of red poppy
Tartar emetic	Tartarised antimony
Tartarised tartar	Tartrate of potash
Tartarum solubili (Lond. Ph., 1746)	,, ,,
,, vitriolatum (Lond. Ph., 1721)	Sulphate of potash
Tartras potassæ et ferri (Lond. Ph., 1839)	Potassio-tartrate of iron
Terchloride of carbon	Chloric ether
,, formyl	Chloroform
Terra Foliata mineralis	Acetate of soda
,, ,, tartari	Acetate of potash
,, ,, tartari crystallisata	Acetate of soda
Terra japonica	An extract of the acacia catechu
,, ponderosa	Sulphate of baryta
,, ponderosa salita	Chloride of barium
Tetanine	Strychnia
Tinctura amara (Lond. Ph., 1749)	Compound tincture of gentian
,, amomi repentis (Edin. Ph., 1839)	Tincture of cardamoms
Tinctura aromatica (Lond. Ph., 1746)	Compound tincture of cinnamon
,, assafœtida ammoniata (Edin. Ph., 1839)	Fœtid spirit of ammonia

Tinctura crotonis eleutheriæ (Edin. Ph., 1839)	Tincture of cascarilla
Tinctura guaiaci (Lond. Ph., 1788)	Ammoniated tincture of guaiacum
,, japonica (Lond. Ph., 1746)	Tincture of catechu
,, meconii	Tincture of opium
,, opii camphorata (Lond Ph., 1788)	Compound tincture of camphor
Tinctura rosarum (Lond. Ph., 1746)	Acid infusion of roses
Tinctura rosarum rubrarum (Lond. Ph., 1721)	Acid infusion of roses
Tinctura stomachica (Lond. Ph., 1746)	Compound tincture of cardamoms
Torrington's drops	Compound tincture of benzoin
Trooper's ointment	Diluted mercurial ointment
Turner's cerate	Calamine ointment
Tutty	An impure oxide of zinc
Unction	Diluted mercurial ointment
Unguentum cerussæ acetatæ (Lond. Ph., 1788)	Acetate of lead ointment
Unguentum saturnicum (Lond. Ph., 1746)	,, ,, ,,
Vegetable salt	Tartrate of potash
Verdigris	Subacetate of copper
Vitriolated magnesia	Sulphate of magnesia
Vitriolic acid	Sulphuric acid
Water of Saturn	Diluted solution of subacetate of lead
White bismuth	Subacetate of bismuth
,, vitriol	Sulphate of zinc
Yellow basilicon	Resin ointment

Next we are favoured with the following:—

Dear Sir,—I had the pleasure (?) of spending three years in a pharmacy in Lancashire, and whilst there frequently came across the following terms, which I do not remember having met with elsewhere.

Waken Beggar	Pulv. Helleb. Alb.
Alegar	Vinegar.
Red borax	Ferri Oxidi Rub.
Worm seeds	Sem. Hyoscy.
Toothache	,,
Bitter chips	Quassia.
Balsam of life	Tr. Benz. Co.
Red dominion	Emp. Ferri.
Crow fig	Nux vomica.
Water of Kali	Liquor Potassæ.
Marcury (mercury)	Arsenic.
Lady's blush	Carmine.

Wormwood-water we were asked for several times, but could never make out what was sold under that name. Oils of spike, brick, swallows, &c , were in almost daily demand. Crabs' eyes and oil of dead men's skulls were occasionally come across.

An assistant, whom we had just engaged, one day came and informed me that there was a customer in the shop whose wants he could not discover. On going to ask the person I found she wanted "a sucker for a pap bottle." Such is the elegant synonym applied in that locality to "a teat."

Yours, &c.,
England.

In the Chemist and Druggist for March 15, 1875, we printed some curiosities contributed by Mr. Appleton, of Attercliffe. Among the names of the pharmaceutical preparations as asked for in Yorkshire was "brick fat," a title which puzzled our correspondent. "Since then," he writes, "I have had numerous letters from different parts of the country on the subject, and the one enclosed serves to elucidate the mystery." The letter alluded to is written by Dr. Aquilla Smith, of Dublin, and we have permission to print it. Dr. Smith writes:—

"In the list of corrupted pharmaceutical nomenclature contributed by you, and published in The Chemist and Druggist, March 15, p. 100, I observe that you do not identify 'brick fat.'

"This article is most probably the 'oleum laterinum' or 'oleum cum lateribus destillatum,' of the older Pharmacopœias. In the 'Pharmacopœia Collegii Regalis Medicorum Londinensis,' folio, 1721, the following formula is given:—

"'Oleum lateritium philosophorum lateris candefacti in oleo olivarum immergantur donec omne oleum imbiberunt. Unde per retortum oleum distillatur a spiritu separandum.'

"In 'Trillerus Thesaurus Medica Mentorum,' 4th edition, 1764, p. 444, oil of bricks is said to be resolvant, and to be useful in cleansing ulcers. Spindlerus, 'Obs. Med.,' 53, p. 97, records a case of tympanitis which was cured by inunction with the oil."

POLLUTED WATER-SUPPLY.

"How to obtain a purer supply of water for London and other large towns?" is still one of the most perplexing questions of the day, and one which assumes an especial importance at this season, when there is every prospect of a long and hot summer.

In the course of a lecture delivered at Brompton on Monday, May 10, by Mr. R. G. Blunt, samples of water were exhibited, drawn from the mains of the various London water companies, which, although nominally filtered according to the provisions of the Act of 1852, were all more or less contaminated with organic impurities, and in their present condition utterly unfit for human consumption. The lecturer showed the utter impossibility of obtaining a pure supply of water from the Thames so long as the towns and villages along its banks are allowed to make use of the river as a convenient receptacle for all kinds of refuse and abominations.

Reference was then made to several schemes which have been proposed by eminent engineers for bringing water to London from purer sources at a distance, but the length of time which must elapse before any of them can be brought into operation must effectually prevent the present generation from deriving benefit from any one of them. Meanwhile the reports of the medical officer to the Privy Council are continually warning us that the evil is steadily on the increase in proportion to the growth of population, and there is a remarkable unanimity amongst the inspectors in attributing outbreaks of typhoid or enteric fever, cholera, diarrhœa and other diseases, almost entirely to the use of contaminated water. Under these circumstances, therefore—viz., the present polluted source of supply, the imperfect mode of filtration adopted by the water companies, the risk incurred by the public in drinking the horrible stuff supplied under the name of water, and the length of time which must elapse before we can procure better—the lecturer contended that we are thrown back upon the only practicable method of dealing with the evil, viz., domestic filtration of all water required for drinking and cooking.

But another question arises, "What is filtration?" Examples were given of several substances through which water may be strained, so as to deprive it of all visible impurities and render it bright and clear, but these were shown to exercise no chemical action upon water containing dissolved organic matter, which is the most dangerous impurity of all.

Several experiments were then made with the Silicated Carbon Filter, demonstrating to the perfect satisfaction of the audience the entire removal of organic matter by the simple process of filtration.

Some filthy Thames water which had been passed through one of these filters was shown to be as perfectly pure as any process short of distillation could render it.

On Wednesday evening, May 12, a paper was read before the Society of Arts by Jabez Hogg, Esq., "On River Pollution and the Impurities of Water Supplied to our Large Towns." After referring to the various poisons—animal, vegetable, and mineral—which find their way into our rivers, and the desirability of preventing, by immediate legislation, the discharge of all refuse matter from chemical works and noxious manufactures, the lecturer gave a number of extracts from the reports of medical inspectors, and brought forward many instances of fatal epidemics which could clearly be traced to unwholesome water. He also adverted to the impossibility of the self-purification of rivers, and to the imperfect filtration at present adopted by the water companies, showing by means of the microscope that immense multitudes of living organisms exist in our water cisterns.

The lecturer strongly condemned the apathy and indifference which exist on the subject of impure water, in spite of the repeated warnings which we have had of its dangerous nature.

In the discussion which followed, several speakers—among whom were Dr. Bartlett and Professor Wanklyn—addressed the meeting, strongly advocating domestic filtration as the only available resource under the existing state of matters, and recommending the Silicated Carbon Filter as the one best adapted for supplying water really free from impurity.

Provincial Reports.

GLASGOW.

Chemists' and Druggists' Association.

This society held its 24th annual meeting on the 14th ult. An attempt was made to force the early closing movement by a motion from Mr. McCann—"That on and after the end of the session no member of the society shall be eligible to hold office unless he agrees to shut his place of business at 8 o'clock."

Mr. Murdoch moved the previous question, which was carried by a large majority, only six voting for the motion.

Mr. Fairlie (secretary) read the report, summarising the work of the past session. It contained a suggestion to send a deputation to Bristol in August next to invite the British Pharmaceutical Conference to Glasgow in 1876. Referring to the memorial lately sent to the Pharmaceutical Council in London, the report stated that, judging from the reception it has received already, and the threat held out that instead of granting concessions the Council is contemplating further restriction, another special meeting of the trade may therefore be necessary to appoint a strong deputation to attend the annual meeting in May, so as to lay the whole matter before the society at large.

The election of officers, etc., for the ensuing year was afterwards proceeded with, the following being the result:—President, Mr. William Greig (New Apothecaries' Company); Vice-President, Mr. Alexander Kinninmont; Treasurer, Mr. J. McGill Murdoch; Hon. Secretary, Mr. J. M. Fairlie. Council: Messrs. John Currie (Sauchiehall Street), D. Frazer, T. Davison, J. Jaap, R. C. Rait (Partick), James McDonald (Glasgow Apothecaries' Company), W. Whyte, J. Fenwick, R. Brodie, J. A. Clarke, A. Paul, G. Garry, and W. McKenzie. Auditors, Messrs. J. C. Steele and James Whitelaw.

LEEDS.

Chemists' Association.

The eighth meeting of this association for the present session was held on February 24; the President, Mr. F. Reynolds, in the chair. Mr. J. Walker, residing with Mr. S. Taylor, having been duly elected as an associate, Mr. Thos. Fairley, F.C.S., the borough analyst, read a paper on "Oxygen and its Compounds, with Original Experiments;" many of the latter, as expressed in the title of the paper, being quite original, were of course new to the audience, and created a considerable amount of interest.

On the motion of Mr. Abbott, seconded by Mr. Longley, the usual vote of thanks was passed to Mr. Fairley.

The ninth meeting was held in the Science Lecture Room of the Mechanics' Institution on Wednesday evening, March 10, the President, Mr. F. Reynolds, again in the chair, when a lecture on the "Chemistry of Carbon" was delivered by Mr. Geo. Ward, F.C.S. The lecturer referred to the various modifications of carbon, and gave a brief description of the physical and chemical properties of each. The compounds of carbon with oxygen were then noticed, and the chief properties of the monoxide and dioxide well illustrated by highly successful experiments. The preparation and properties of marsh gas and olefiant gas were next briefly noticed. Carbon was shown to be the essential element in that division of science described as organic chemistry. The supposed constitution of some organic compounds —including alcohol, aldehyde, acetic acid, and ether—was clearly demonstrated by the use of glyptic formula, the tetrad function of the carbon atoms in all these compounds being illustrated. The lecturer concluded by referring to the similar tetrad function of the element silicon, and the existence of compounds in the silicon series which were chemically quite analogous to the corresponding carbon compounds; enumerating the silicon chloroform and other substances as instances of the close analogy between the two series.

A vote of thanks to Mr. Ward for his very able lecture was, on the proposal of Mr. Childe, seconded by Mr. E. O. Brown, carried unanimously.

The tenth meeting was held on Wednesday evening, March 24, when A. W. Rücker, Esq., Professor of Physics in the Yorkshire College of Science, lectured on "Some Physical Properties of Gases."

The lecturer, after explaining the general principles of the molecular theory of the constitution of bodies, showed some experiments to prove that the motions of the molecules produce the phenomena of heat, and then passed on to a fuller account of the explanations which have been given on mechanical principles of some of the simpler thermal and physical properties of gases.

The pressure of gases and the production of heat by compression were explained by the aid of experiments, and diagrams were exhibited illustrating the changes in the velocities and directions of motions produced by the encounter of two of the constituent molecules of a gas, and an explanation having been given of the rapid equalisation of pressure on all sides of the containing vessel when its equilibrium has been momentarily disturbed, the lecturer concluded with a short account of the application of the molecular theory to the phenomena of conduction and diffusion in gases.

The Chairman, Mr. F. Reynolds, having expressed the pleasure with which he had listened to the lecture, and remarked upon the slightly increased attendance, called for a vote of thanks to the Professor, which was accorded by acclamation.

The other business of the meeting consisted in the election of Mr. J. E. Ellison as a member.

The eleventh and last ordinary meeting of the present session was held in the library of the association on Wednesday evening, April 14, the chair as usual being occupied by the President, Mr. F. Reynolds.

An address to students, entitled "How shall I Pass My Examination," was delivered by Mr. E. Yewdall. He strongly advised them to rise early, and methodically divide their leisure hours for study. He then passed in review the various subjects comprised in the pharmaceutical examinations, offering a few practical suggestions in connection with the study of each, and specially alluded to the value of microscopical investigation.

A cordial vote of thanks was passed to Mr. Yewdall at the conclusion of his address.

LIVERPOOL.

Chemists' Association.

The eleventh general meeting was held at the Royal Institution, Colquitt Street, the President, Mr. Alfred H. Mason, F.C.S., in the chair.

The minutes of the previous meeting having been read and confirmed, Mr. Watson Peck was elected a member.

The donations of several periodicals to the library having been announced, the President said it was with great pleasure he complied with the request of Mr. Thomas Morson, of London, and in his name presented to the association a beautifully executed portrait of his father, the late Mr. Thomas Newborn Robert Morson. It was the privilege of some present to have enjoyed his personal friendship, but he had left behind a name so well known to chemists throughout the world that he (the President) need not say more than express a hope that the picture would for many years adorn the walls of their museum, and be looked upon as a noble example for the members to follow and the students to emulate. He begged to move the following resolution:—"That the best thanks of the association be given to Thomas Morson, Esq., F.C.S., of London, for his acceptable donation to the museum of an admirably faithful portrait of his father, the late Mr. Thomas Newborn Robert Morson, F.C.S., &c., who was so highly esteemed by the members."

Mr. Abraham begged to second the motion. He had had the pleasure of a personal acquaintance with Mr. Morson for many years previous to his death. He believed that Mr. Morson was the first, certainly the most distinguished, of those who devoted themselves to the preparation of the alkaloids and other of the active principles of vegetable medicines which were introduced about fifty years ago. He was an able man, kind, hospitable, and genial, and was much loved in a large circle, which was not confined to pharmacists. The likeness was excellent.

The resolution was carried unanimously.

Dr. Symes presented a specimen of carnaba root for the museum (see *Pharmaceutical Journal*, February 20, 1875), and exhibited some pharmaceutical preparations from it. He also exhibited some salycilic acid, recommending its use as a disinfectant: being free from smell, its use was said to be preferable to carbolic acid, and it is non-poisonous. Mr. Abraham said he had communicated with Messrs. Calvert & Co., advising them to label carbolic acid "poison" in future, and he believed they intended to carry out his suggestion.

The thanks of the meeting being given to Dr. Symes, Mr. Edward C. Parnell, F.C.S., read a paper on "The History of Bleaching Powder." See page 141.

It being too late to discuss the paper, Mr. Davies moved an adjournment, which was carried.

The twelfth general meeting was held May 6, the President in the chair.

Mr. Thomas Garside, of Southport, was unanimously elected a member of the association.

The President exhibited a specimen of artificial vanillin.

Mr. Edward Davies, F.C.S., then opened the discussion on Mr. Parnell's Paper, read at the previous meeting. He said that as it was not his intention to review the whole subject, what he had to say would be of an unconnected character. His opinion was that bleaching powder was a compound of chloride and hypochlorite of calcium, based on the production of hypochlorous acid when a dilute solution was distilled with sulphuric acid added to semi-saturation, and from the analogy of the reaction when chlorate of calcium was formed. With regard to the quality of the manganese as dissolving readily or with difficulty, he had devised a method for getting some idea by making a coarse powder of definite size, and heating in a water-bath with hydrochloric acid of 24° Fah. The comparative time required to dissolve the manganese gives a fair idea generally, though in a case in which the manganese was intersected with thin veins of quartz it had failed.

Mr. Martin Murphy, F.C.S., said that he had been acquainted with the manufacture of bleaching powder for twenty-six years, and gave a description of the method employed at first. Whilst the arrangements for making the chlorine had been wonderfully improved, the absorption of it had been neglected. The necessity for men to have to enter the chambers and turn over the half-saturated lime, and to pack it when finished, was barbarous and inhuman. The inhalation of chlorine and the dust of the powder was exceedingly injurious, produced phthisis, and could only be endured by the use of large quantities of whisky. It was time some mechanical means should be introduced. He mentioned Dr. Muspratt's work on "Bleaching Powder," and concluded by objecting to the method of testing bleaching powder for its commercial value, in which protosulphate of iron is used, as giving results 1½ per cent. to 2 per cent. too high.

Mr. Armstrong, F.C.S., spoke of the value of Mr. Parnell's Paper. He thought that perhaps by some such arrangement as a proof-stick used in sugar manufacture exposure to chlorine in drawing samples might be avoided.

Mr. E. W. Parnell, F.C.S., replied at some length. He did not think that the composition of bleaching powder had been absolutely settled. With regard to chlorine in the chambers when the packing had to be done, in well-regulated works the excess of chlorine was syphoned off before opening the chambers. He thought that any arrangement for mechanical agitation of the lime and packing would necessitate too expensive a plant.

A cordial vote of thanks to Mr. Parnell concluded the meeting.

WOLVERHAMPTON.

CHEMISTS' AND DRUGGISTS' ASSOCIATION.

THE last monthly meeting of the present session in connection with the above association was held on the 15th ult., Mr. Fleming (President) in the chair.

The Senior Secretary (Mr. Brevitt) read the report, which, anticipating next session, hoped to provide a programme as follows:—1. That a full course of lectures (occupying six months) will be delivered on all the subjects required for the Preliminary, Modified, Minor and Major Examinations of the Pharmaceutical Society. 2. That suitable rooms will be engaged for the sole use of the association. 3. That the proposed library and museum, towards which much help has been promised and given, will be in full working order. 4. And as some help will doubtless be given by the Pharmaceutical Society, the committee confidently hoped that the association would offer greater advantages to members and associates than it had yet done, owing to its somewhat hurried establishment. The Adulteration Bill and the death of Mr. D. Hanbury were also referred to.

The next business of the evening was an exhibition by Mr. W. L. Scott, of Westphal's apparatus for ascertaining the density of fluids, manufactured by Messrs. Gillman & Co., of 57 Ludgate Hill. The specific gravity of several liquids was taken by this delicate apparatus, and the members were much pleased with the accuracy of the results obtained. Mr. Scott stated that in the case of viscid liquids the instrument would not show beyond the third decimal place, and sometimes even this with difficulty, but that this difficulty might be overcome in a great measure by wrapping a band of tinfoil round the trial cylinder, and connecting it and the liquid inside under examination with the secondary terminals of a small Harris's induction coil. Under the influence of the voltaic current so applied the liquid becomes thinner or more mobile from the mutual repulsion of its particles. Westphal's instrument will then indicate to the fourth decimal place.

Mr. Hancock, of Dudley, introduced his patent drug-mixing machine; and

Mr. Stokes-Dewson gave a brief address on drug adulterants, giving information with regard to various spurious drugs, and describing their appearance and effects as compared with the articles for which they were sometimes substituted.

Votes of thanks to Mr. Scott, Mr. Hancock, and Mr. Dewson were passed.

Medical Gleanings.

Very curious statistics are published from time to time respecting the vital energy of the Jews, individually we mean, not as a nation. It is said that when the plague swept over Europe in the fourteenth century it scarcely touched them; that in other great epidemics they have escaped with far less injury in proportion than their Gentile neighbours; and some American doctors have noticed in this race a singular immunity from consumption.

According to Stallard, the mortality among Jewish children in London from one to five years of age is only 10 per cent., while among the Christians it is 14 per cent. The average duration of life of the Christian in London is thirty-seven years; of the Jew forty-nine years.

Commenting on some of these statements, the *London Medical Record* says:—"Some of the causes of Jewish longevity are chiefly as follows. They are obliged to keep two Sundays in a week, besides Jewish, Christian, and political holidays. The circumstance of two out of every seven days being lost to business, gives them by necessity about twice as many days of leisure as Christians. They do not engage in mining, mechanics, and other hazardous occupations. The biblical and traditional prohibitions of certain aliments is favourable to longevity. The fifth and last of the summary of causes to which M. Legoyt attributes the greater mean average duration of life of this people, is that 'the *sentiment de la famille*, more developed in them than in Christians, assures to their children, to their aged and infirm parents, a solicitude more active; to the newborn the mother's nursing; to the poor an assistance more efficacious. Their charity is unequalled; their morality is demonstrated by judiciary statistics; firmness and serenity of spirit are the most marked traits of their character, and proceed from a profound faith, from an unalterable confidence in Providence.' They rarely use alcoholic liquors, and almost never to excess; this is universally conceded. They seldom marry out of their own race, and have little hereditary disease."

⁂

The following announcement has been issued by an Antipodean practitioner, and neatly hits off some of the "frailties" of the faculty:—

Practice resumed.—Dr. Frederick Beer begs to announce that he has resumed practice; and, being a Doctor of Medicine, Doctor of Surgery, and of the art of Midwifery, he is fully qualified to become the medical adviser of families, institutions, &c. As a physician, coming from the most enlightened continental school, he is unapproached by any practitioner in the Colony—a fact which is borne out by the *Lancet* of July 1, 1871. He will, in the prosecution of his duties, be guided by fixed principles, of which the following is a summary.

1. His rooms will not be carpeted, nor adorned with hangings, in order that he may keep them absolutely clean and free from the *débris* of fallen morbid matter from cutaneous and other diseases, and thereby prevent them from becoming a hotbed for the propagation of disease.

2. His consulting-rooms, as soon as a more suitable dwelling can be obtained, will be in a central but secluded part of the city, free from the incessant noise of traffic, and where alone it

will be possible to make correct and minute diagnoses of diseases of the chest.

3. He will not make his practice a mere routine one, nor call oftener on patients than is required; nor will he unnecessarily recommend consultations in the cases of people of means; nor will he consent to consult with any practitioner (though the said practitioner may be legally qualified) whom he knows from the nature of the case to be incompetent to form an adequate opinion thereon. For example, he will not meet a mere surgeon in a medical case, or *vice versâ*.

4. He will not accept from druggists a percentage on medicines supplied by them; nor will he compel his patients to have their prescriptions dispensed in any particular establishment by giving advice therein.

5. He will not attempt to attract and gain support from the vulgar by any external display; such as dazzling equipages, liveried lacqueys, etc.

6. His charges will be regulated by the claims on his time and attention. The following scale will indicate them :—For visits in the city and its immediate suburbs: in medical cases, one guinea; for surgical visits, same distance, half-a-guinea for full topical examination of the thoracic viscera, with written diagnosis, prognosis, and indications for treatment, one guinea; for ordinary medical and surgical consultations, at his residence, half-a-guinea; servants, on weekly wages, half-price.

As soon as more eligible premises can be obtained, Dr. Beer will give due notice thereof.

2 Burdekin Terrace, College Street, Sydney.
April 3, 1874.

⁂

Dr. Samuel W. Francis, of New York, has found out why mosquitos were created. "It is my firm conviction," he says, "that the mosquito was created for the purpose of driving man from malarial districts; for I do not believe that in nature any region where chill and fever prevail can be free from this little animal. Now if man will not go after warning is given in humming accents, then the mosquito injects hypodermically a little liquid which answers two purposes: firstly, to render the blood thin enough to be drawn up through its tube; and secondly, in order to inject that which possesses the principles of *quinine!*" We don't like to seem what the French call *difficult*; but the next question is so very obvious that we must put it. Will Dr. Francis kindly tell us why "malarial districts" were created? It is very nice to have mosquitos to give warning of the presence of danger, but if the malarial districts had not been, the mosquitos, according to Dr. Francis, would have been unnecessary too. Let us come to first principles, doctor.

⁂

The *Medical Enquirer* is the title of a new monthly journal published in Liverpool. Its avowed purpose is to serve as the organ of the opponents of the Contagious Diseases Acts. When the first of these Acts was passed in 1864 the *British Medical Journal* characterised it as "the grossest violation of the liberty of the subject that had ever been proposed to a British Parliament," as an Act "which reduced Englishwomen to the condition of mere animals, and treated them with less consideration than an Oriental despot would show to the slaves of his harem." Since then, however, with alarming unanimity, all the established medical journals have become the uncompromising advocates of the Acts; opponents have been sneered at with coarse gibes; and discussion has been imperiously prohibited. But a large and influential body, comprising many of the most distinguished and honourable names in Britain, have declared an undying opposition to laws which legalise vice, and which give the power to police officers to insult and degrade women for no crime but their sex. There is by no means satisfactory evidence that these Acts have been beneficial in a sanitary sense; but if there were, such benefit is purchased by a sacrifice of morality which is dearer than England can afford to pay, and it must be obtained some other way. Only a month ago a poor actress, at Aldershot, shamefully persecuted under these Acts, drowned herself. Sentimental nonsense, no doubt; what did she want to be so wonderfully particular about her character for? But for all that, laws which drive an intelligent woman to suicide deserve at least to be inquired into; and these Acts will need more than the thick-and-thin support of the medical papers to justify them in face of that sad tragedy. We are glad, therefore, to see this new paper; and we are glad to see from it that there are physicians in the profession who can treat public questions from a humanitarian as well as from a professional point of view.

LEGAL & MAGISTERIAL.

STRYCHNINE SERVED INSTEAD OF SANTONINE.

Alexander Jamieson, assistant to Dr. James Allen Smith, of Glasgow, was charged at the Glasgow Spring Circuit Court, before Lord Deas, with culpable homicide.

The indictment stated that the prisoner, on March 9 last, culpably and negligently supplied an engine-fitter named John Parker, residing in Wellfield Place, Springburn, with a quantity of strychnine instead of a crystal powder for expelling intestinal worms, to be administered to a child from seven to eight years of age.

Prisoner pleaded not guilty, and the case went to proof.

From the evidence it appeared that when Parker asked for the crystal powder, by which he hoped to cure his child, prisoner remarked that that was "a queer dose for such a child." Prisoner gave him a powder, which he took from a bottle in a careless manner. The powder was given to the child, who, a few minutes after it was administered, "made a great scream" and fell, and when lifted up said, "Oh, my daddy, I cannot stand," and soon after died. Dr. Smith, with whom prisoner was employed, was immediately called, but the child died before his arrival.

Prisoner's declaration was then read, which stated that he was 25 years of age, and had been in the employment of Dr. Smith for nine months. He believed he made a mistake on March 9 last in supplying Parker with a quantity of strychnine in place of santonine.

The jury retired, and, after an absence of fifteen minutes, by a majority found the prisoner guilty as libelled: but unanimously recommended him to the leniency of the court.

Lord Deas, in passing sentence, said it was difficult to see any mitigating circumstance; but he was most desirous to keep in mind the recommendation of the jury, and taking into consideration the prisoner's good character, he would only pronounce sentence of three months' imprisonment.

THE BRITISH SEAWEED COMPANY.

The Judicial Committee of the Privy Council had before them on May 4 a petition from Mr. E. C. Stanford for a prolongation of letters patent granted to him on June 4, 1861, for an invention of certain improvements in obtaining products from seaweed.

Mr. Aston, Q.C., and Mr. Macrory were counsel for the petitioner; the Attorney-General and Mr. Charles Bowen for the Crown.

The invention in question may be thus briefly described. In place of burning seaweed to obtain ashes, as heretofore practised, the seaweed is subjected to the action of destructive distillation, by which means not only are the ashes obtained in a more favourable condition for the separation of iodine and potash, but the vaporised products, which were lost by the process of burning, are condensed and retained for use. It was believed that the process of destructive distillation might be most conveniently carried on by the use of retorts or vessels externally heated and connected with suitable condensers, but other well-known means of destructive distillation—among others, superheated steam—might be employed. The ashes or residue thus obtained and the condensed matters were then treated by well-known processes to separate and purify the products contained in them. The gases evolved might also be collected and employed for the purposes of light and heat. The inventor had assigned his patent to a limited company, in which he held 470 shares, all of par value.

The Duke of Argyll, speaking from an experience of the seaweed trade and the manufacture of kelp or seaweed ash in the Western Islands of Scotland, which he described as forming the principal occupation of a very large part of the population and a great portion of the rental of many landed proprietors, gave evidence of the wasteful character of the former process of manufacture and of the great merit of the petitioner's invention. He himself had let to the company an island named Tyree for the purposes of the invention, and the trade had altogether largely increased.

Other witnesses, including Mr. Stanford himself, were called in support of the prayer of the petition.

The Attorney-General, speaking for the Crown, admitted the merit of the invention, but drew their Lordships' attention to the fact that the patentee had already made a profit by it of 4,860*l.*

Sir Barnes Peacock, who delivered their Lordships' judgment, said, looking to the nature of the patent, they considered that Mr. Stanford had obtained sufficient remuneration for the merit ot his invention, and they would, therefore, humbly advise Her Majesty not to grant the prayer of the petition.

THE TROUBLES OF A TRANSGRESSOR.

Mr. W. V. Aldridge, an oilman, of Islington, was prosecuted under the Pharmacy Act by a private individual named Ward, for selling oxalic acid without a proper poison label bearing his name and address.

Defendant said this was his custom, and he knew no better.

Mr. Cooke, the magistrate, fined him 50*s.*

A few days after, the same defendant applied to Mr. Cooke to ask his advice under the following circumstances:—The former case appearing in the newspaper, Messrs. Flux & Co., on the part of the Pharmaceutical Society, applied for the sum of 5*l.* for having sold oxalic acid at all, he not being on the register of chemists and druggists. He was further informed that if he did not pay that sum, together with 5*s.*, the cost of the letter, further proceedings would be taken against him forthwith to recover that penalty. He thought that once having paid the penalty he had no right to pay a second penalty.

The penalty was fixed by the act at 5*l.*, and under the circumstances of the case his worship thought that the justice of the case would be met by his paying 2*l.* 10*s.* and 2*s* the cost of the summons.

Mr. Cooke said that as far as that court was concerned, the defendant had paid the penalty for infringing the law, and could not now be called upon to pay a further penalty. The letter seemed to indicate that the attorney for the Pharmaceutical Society was about to take civil proceedings for the recovery of the penalty and the costs. With that he had nothing to do, and could, therefore, not give the applicant any advice. He had better consult his solicitor upon the matter.

The applicant said he would do so, and having thanked his worship, retired.

BANKRUPTCIES AND LIQUIDATIONS.

H. Appleby, Chemist and Druggist, 47 Mortimer Street, Cavendish Square.

The debtor, formerly of Tottenham Court Road and Pinner, applied on April 17 to pass his public examination before Mr. Registrar Spring Rice on a statement of affairs shewing unsecured debts 645*l.* 3*s.* 11*d.*, debts for which security is held 800*l.*, and liabilities 150*l.*; against assets 442*l.*, comprising bills of exchange, book debts, and an estimated surplus from property held as security. The following were the principal creditors:—

	£	*s.*	*d.*
Messrs. Bangs, Hampstead Road	217	2	10
Barron & Co., Bush Lane	70	0	0
E. Cleaver, Great Portland Street	70	0	0
Messrs. Herring, Aldersgate Street	65	7	0
Maw & Son, Aldersgate Street	55	16	10
Wright, Sellers & Co., Southwark Street	39	0	0
Beard & Co., Regent Street	25	0	0
—— Rorke, 47 Mortimer Street	16	0	0
Meggeson & Co., Cannon Street	15	0	0
Smith & Co., Tottenham Court Road	13	12	10

Mr. Wildey Wright appeared for the trustee, and asked that the bankrupt should furnish a general cash account, together with an account of his sales and expenditure during the year preceding his bankruptcy.

His Honour acceded to the application and adjourned the further hearing to June 5.

James Parnell, Chemist and Druggist, of Berry Street, Wolverhampton.

A meeting of the creditors was held on April 24, at the offices of Mr. Charles Barrow, solicitor, 48 Queen Street. Mr. Barrow appeared for the debtor, and there was a fair attendance of creditors in person.

The statement produced on behalf of the debtor showed liabilities unsecured, 343*l.* 7*s.* 3*d.*; ditto to be paid in full, 10*l.* 3*s.*; total liabilities, 353*l.* 10*s.*; assets, consisting of stock-in-trade, book debts, fittings, &c., 80*l.* It was resolved to accept a composition of 3*s.* 6*d.* in the pound in discharge of the debtor's liabilities, payable in two instalments, at three and six months respectively, the last instalment to be secured. Mr. Barrow was entrusted with the registration of the resolutions.

F. Browning, Oil Merchant, St. John's Street.*

The debtor, Francis Browning, trading as James Henry Browning & Co., and residing at 44 Highbury New Park, filed a petition for liquidation by arrangement or composition on Monday, May 3, and on Tuesday Mr. Horton Smith (instructed by Mr. William Sturt) applied to Mr. Registrar Roche for the appointment of Mr. S. W. Baggs, public accountant, King Street, Cheapside, as receiver and manager of the estate. The debts were estimated at 145,000*l*, about 60,000*l.* being secured, and the assets were estimated at 55,000*l.* or thereabouts. It appeared that the debtor had for several years past been in partnership with various members of his family, and he was now under heavy liability to the estates of his deceased partners. Large contracts for oil were pending, and there were heavy sales to be made and transactions to be carried out. A meeting of some of the principal creditors had been held, and it was resolved that a petition for liquidation should be filed and the present application made to the Court. His Honour: As there are contracts to be carried out which may prove beneficial to the creditors, I will appoint Mr. Baggs receiver and manager. The following is a list of the principal creditors:—

	£	*s.*	*d.*
The Estate of the late James Browning	35,681	12	10
London and Joint-Stock Bank	19,732	0	0
Estate of the late Henry Browning	18,239	6	8
London Rice Mills Company (Limited)	10,417	16	3
J. Harman & Co., 14 Mincing Lane	9,058	14	4
Estate of the late William Browning	9,013	14	3
Bowes & Co., 38 Threadneedle Street	4,861	2	6
Philips & Webb, 6 Great St. Helen's	4,429	9	9
Bevan & Co., 117 Bishopsgate Street Within	2,269	15	4
Rose, Schwartz & Co., Leghorn	1,522	18	9
F. de Martins Introna, Bari, Italy	1,417	2	11
Dalton & Young, Market Buildings, Mincing Lane	1,412	12	7
G. Soanes, Son & Co., Crosby House, E.C.	1,187	4	5
Nutter & Pinchin, 32 Great St. Helen's	1,133	9	6
Rayner, Andrews & Co., Adam's Court	1,083	18	5
E. Pandorf, 16 Mark Lane	949	10	0
Goodlake & Nutter, 71 Cornhill	787	10	7
Nickoll & Knight, 21 Great St. Helen's	591	19	6
Ellen Browning, Eagle House. Edmonton	473	5	6
T. M. Duché & Sons, 150 Fenchurch Street	341	19	4
Rose, Wilson & Rose, 31 Threadneedle Street	317	15	4
G. Steinhoff, 4 Suffolk Lane	271	10	0
Woringham & Co., Deptford	270	12	0
Barnett & Postlethwaite, Commercial Road, S.E.	266	15	0
J. R. Huggins, 26 St. John Street	257	0	0
T. Merry & Sons, 139 Fenchurch Street	249	4	6
Northcott & Sons, 11 Rood Lane	248	7	5
T. Sharwood & Co., 7 Bishopsgate Street Within	209	19	8
W. B. Dick & Co., Clyde Oil Works, Glasgow	199	2	3
C. Greaves, 93 Oxford Street, Manchester	177	5	8
Robin Maringay & Co., Naples	162	10	7
W. Beard & Son, 19 Bishopsgate Street Within	128	9	5
Gun-and-Shot and Griffin's Wharves	116	4	11
Pickford & Co., Gresham Street	110	12	0
W. Bilton, St. John Street	103	18	11
Sharp's Wharf, Wapping	100	6	9
T. Barber & Sons, St. Thomas's Street, S.E.	89	11	0
S. T. George, St. John Street	87	10	0
N. J. & H. Fenner, Millwall	77	0	3
Brandram Bros. & Co., Philpot Lane	70	13	5
H. E. Sorel Frères, Honfleur	70	0	8
Read & Jackson, Bristol	68	8	9
Mordaunt Bros., St. Helen's Place	68	2	9
Finch, Rickman & Co., Broken Wharf, S.E.	64	3	10
Pinchin, Johnson & Co., Cable Street	62	1	3
R. & J. Hewetson, 1 Catherine Court, E.C.	60	0	0
Talbot & Alders, 60 Fenchurch Street	58	5	10
Turner, Blewitt & Co., Blackwall	57	0	7
A. C. Newson, 26 St. John Street	53	1	9
A. Bell & Co., New London Street	51	5	0
Horsley, Kibble & Co., 79 Gracechurch Street	49	7	6
Wilson & Co., coopers, Bermondsey	46	16	7
Stephenson, Morgan & Co., King's Cross	45	7	0
Walkers, Parker & Co., Belvidere Road	41	2	9
Lewis & Peat, Mincing Lane	40	19	10
W. G. Nixey, 12 Soho Square	39	7	6

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* From *The Grocer*.

W. Gridley & Co., Bishopsgate Avenue	35	3	0
Samuel Ward & Co., Upper Thames Street	34	4	5
Stanford & Seaward, 41 Bishopsgate Street	30	3	7
Iles & Taylor, Stratford	30	3	6
W. Lynd & Co., Leeds	29	9	3
W. Johnson, 2 Holywell Lane	27	1	11
G. Hearn & Co., Short Street, Curtain Road	27	1	0
Vaughan, Smith & Co., St. Helen's Place	26	17	1
Ingall, Phillips & Co., 5 Jeffery's Square	23	12	7
W. Caudery & Co., 150 Fenchurch Street	21	18	9
Fergusson & Foster, Eastcheap	20	3	6
G. Mullins, Goodman's Yard, Minories	19	19	0
Skilbeek Bros., Upper Thames Street	17	10	11
G. H. Chaplin, 17 Great St. Helen's	17	1	6
J. Orothwaite, Central Street, St. Luke's	16	18	11
G. Hedges, High Street, Wapping	16	4	4
Ewbank & Co., Long Lane, Bermondsey	15	7	6
Nelson, Dale & Co., 14 Dowgate Hill	14	16	5
T. Hubbuck & Son, 24 Lime Street	14	14	11
Chance Bros. & Co., Birmingham	14	12	5
S. W. Rowsell & Son, 31 Cheapside	14	10	6
Braden & Co., Bermondsey	14	5	6
Grindley & Co., Upper North Street, Poplar	14	4	8
E. T. Gooch & Son, 55 King William Street	13	7	4
Burrows & Co., 3 Newman's Court, E.C.	12	2	6
T. C. Hills, Chemical Works, Deptford	11	18	3
Pfiel & Co., St. John Street	10	4	0

The meeting of creditors is to be held at the Guildhall Tavern on May 20, at two.

Richard Condy, Drug Merchant, 15 Garlick Hill, and Duke Street, Adelphi.

A PETITION for liquidation by arrangement or composition has been filed by the debtor, and the case was brought before Mr. Registrar Brougham on May 11. Mr. Philp said that he was instructed to apply for the appointment of Mr. W. Liddall, accountant, 15 Union Court, Old Broad Street, as receiver, and for an interim injunction staying further proceedings at the suit of the following creditors:—The British Mutual Investment Company (Limited), for recovery of 330*l.* 9*s.* 7*d.*; Mr. William Holland, of Deptford, for 99*l.*; the North-Western Bank (Limited), Liverpool, for 134*l.* 15*s.*; Messrs. Meinhertzhagen, Bell & Co., 9 Mincing Lane, for 180*l.* 1*s.* 7*d.*; Mr. F. C. Johnson, 57 and 58 Great Tower Street, for 21*l.* 11*s.* 6*d.*; and Messrs. Streckheisen & Bishoff, 7 and 8 Great Winchester Street Buildings, for 134*l.* 15*s.* The total debts were about 8,000*l.*, but of this amount it was expected that only 3,500*l.* would rank against the estate; the assets, consisting of stock, book debts, furniture, and goods in the hands of creditors, were estimated at 1,500*l.* It was material that the property should be protected, and his Honour accordingly appointed Mr. Liddall receiver, and granted an interim injunction against the various suing creditors.

BANKRUPTS.

Leyland, Luke S., Stockport, Cheshire, apothecary. April 19.

Purcell, Francis J., trading as **F. Purcell & Son**, 59 Thomas Street, Dublin, wholesale druggist. April 16.

Van Gelderen, Jaques Manuel, Middlesborough, surgeon dentist. April 6.

BANKRUPTCIES ANNULLED.

Brock, William K. (April 2, 1872), Addison Terrace, Kensington, surgeon. May 7.

Thistleton, James M. (Mar. 6), 1 Old Quebec Street, Portman Square, medical galvanist. May 4.

LIQUIDATIONS.

(By arrangement or composition.)

Notices of first meetings have been issued in *re* the following estates. The dates are those of the petitions:—

Burton, John, Junr., Walsall, surgeon. April 14.

Higgins, Andrew H., Long Lane, Bermondsey, physician. April 23.

Hollings, Edmund, High Street, Deritend, Birmingham, chemist. April 13.

Hopwood, Edwin, Lower Aspley, and Pack Horse Yard, Huddersfield, druggist and wine merchant. April 20.

Hurton, William F., 1 Charles Street, Lowndes Square, medical practitioner. April 12.

Parnell, James, Wolverhampton, chemist. April 9.

Rae, Alexander S., Ely, Cambridgeshire, chemist. April 22.

Richardson, Arthur, Barnsbury Road, Islington, late Old Kent Road, medical practitioner. May 1.

Tily, James, Richmond, Surrey, doctor. April 14.

Watson, Edward G. R., Beccles, Suffolk, chemist. April 19.

DIVIDENDS DECLARED.

Smith, Robert (Bkt.), Kensington, surgeon, 1st div. 1*s.* 3½*d.*, P. Paget, Bankruptcy Court, Basinghall Street.

Taylor, David (Liq.) Bradford, chemist, 1st div. 6*s.* 8*d.*, A. Atkinson, 15 Kirkgate, Bradford.

PARTNERSHIPS DISSOLVED.

Bailey & Thomson, Hanwell and Southall, surgeons. March 12.

Balkwill & Co., Old Town Street, Plymouth, chemists. March 25.

Bowstead & Buckley, High Wycombe, surgeons. March 25.

Cardwell & Weir, Radcliffe, Lancashire, cattle condiment manufacturers. March 31. Debts by John Cardwell.

George & Burroughs, Whitchurch and Prees, Salop, surgeons. March 30. Debts by Ambrose B. George.

Heaton & Gobat, Wrexham, Denbighshire, and Overton, Flintshire, surgeons. March 1. Debts by Frederick L. Heaton.

Iles & Tayler, Marsh Gate Lane, Stratford, chemical manufacturers. March 31. Debts by Benjamin Iles.

Osborne & Smiley, 88½ Ann Street, Belfast, druggists. Jan. 13. Debts by Samuel Smiley.

Ridge & Lawson, Enfield, surgeons. March 20. Debts by John J. Ridge.

Roberts & Pollard, 11 Lamb's Conduit Street, surgeons. April 14. Debts by Clement Pollard.

Symes, S. H., & Co., 31 Windmill Street, Finsbury, manufacturers of scents and perfumes. April 14. Debts by Sidney H. Symes.

Watson, Kipling & Co., Seaham Harbour, Durham, chemical and iron manufacturers. Jan. 1.

White & Son, Dalston Place, Dalston, and Downs Park Road, Hackney, surgeons. March 31.

[The following list has been compiled expressly for The Chemist and Druggist by L. de Fontainemoreau & Co., Patent Agents, 4 South Street, Finsbury, London; 10 Rue de la Fidélité, Paris; and 33 Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

1016. J. P. O'Brien, of Liverpool. Improvements in machinery for capsuling bottles and other like receptacles. Dated March 19, 1875.

1141. R. Clayton, of Bradford, Yorkshire. Improvements in stoppers for bottles and similar vessels. Dated March 30, 1875.

1152. A. W. Barker, of New Bond Street. A new or improved manufacture of medicinal discs, to be employed for surgical and medicinal purposes. Dated March 30, 1875.

1298. T. W. Wilson, of Woodbridge, Suffolk. Improvements in apparatus for extracting corks from bottles. Dated April 9, 1875.

1323. H. Gaskell, of Widnes, Lancaster. Improvements in the manufacture of alkali. Dated April 12, 1875.

1329. T. W. Wilson, of Woodbridge, Suffolk. An improved bottle crate Dated April 13, 1875.

1347. T. J. Chapman and H. B. Fox, of Oxton, Chester. Improvements in apparatus for bottling aërated or gaseous liquids. Dated April 14, 1875.

Letters Patent have been issued for the following:—

3575. P. J. Luntley, of Scarborough. Improvements in stoppers for bottles containing soda water and other such fluids, and in bottles connected therewith. Dated Oct 17, 1874.

3595. E. Breffit, of Upper Thames Street. Improvements in stopping and unstopping bottles, more particularly when such bottles contain aërated liquors forced in by machinery or generated within. Dated Oct. 19, 1874.

3946. J. G. Tongue, of London. Improvements in preserving animal and vegetable substances. Dated Nov. 17, 1874.

418. J. Wadsworth, of St. Ives, Huntingdonshire. Improvements in stoppers for bottles containing aërated waters. Dated Feb. 4, 1875.

490. L. Vallet, of Liverpool. Improvements in stoppers for bottles for containing aërated or gaseous liquids and in apparatus employed for bottling such aërated liquids. Dated Feb. 10, 1875.

Specifications published during the month:—

Postage 1*d.* each extra.

1874.

2160. B. Hunt. Preserving food. 6*d.*
2486. T. Coad. Stoppers for bottles. 8*d.*
2547. R. Giebermann. Superphosphate of lime. 8*d.*
2568. H. Y. D. Scott. Phosphate salts. 4*d.*
2624. S. Nield and another. Manufacture of prussiate of potash, &c. 10*d.*
2639. J. H. Johnson. Manufacture of soda and potash. 4*d.*

THE CHEMIST AND DRUGGIST

COLONIAL BUILDINGS, 44A CANNON STREET, LONDON, E.C.

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DEFEAT OF THE ANALYSTS.

THE Society of Public Analysts held a general meeting at the Cannon Street Hotel on the 5th inst., when the Council presented a report congratulating the members rather warmly on the successful issue and bright promise of their attempts to improve the Sale of Food and Drugs Bill. We are very glad to find that the Council of this imposing society is so easily satisfied. It would be greedy, indeed, to grudge them the few "courteous letters" which they seem to have received from the Local Government Board office, and which, as far as we can see are about the only results of their efforts, which, however, it must be acknowledged have been strenuous enough. The definite objects for which they have fought so vigorously have not been conceded by the House of Commons, and though the defeat had not been completed when their report was written, we should have thought they would have been keen enough to have perceived sufficiently the temper of that body so far as they were concerned. The editor of the *Lancet*, who has all along been one of their fiercest and most uncompromising supporters, but who is perhaps more experienced in defeats, must at any rate be credited with more accurate judgment than was exhibited in the report published by the secretaries of this ardent young society. In an article in that journal of May 1 we read: "It is evident that no hope need now be entertained that the House of Commons will do anything to improve the bill." The writer's despair was founded upon the very decided manner in which the House had refused to accept Dr. Cameron's monstrous amendment to Clause 3, which, had it been carried, would have rendered a trader liable to six months' imprisonment with hard labour if he had innocently and with no fraudulent intention sold an article a little short of absolute purity; absolute purity, too, to be decided by the omniscient and practically irresponsible analyst. Even Dr. Playfair forsook his friend on this point, and statesmen like Mr. Forster, Mr. Sclater-Booth, Mr. Mundella, and Mr. Forsyth expressed their objection to such a blindly furious attack on tradesmen as this. Mr. Macdonald, the working-men's member, who, like the Midland Railway Company, has shown a consistent desire to obliterate the middle classes from society altogether, gave his valuable support to the member for Glasgow; but the latter, seeing the hopeless condition, or, let us hope, convinced of the injustice of his proposal, withdrew his amendment. We venture to point out here, however, what seems to us a defective wording of the bill; we are inclined to doubt whether the clause as it now stands exactly expresses the evident meaning of the Committee of the House of Commons. It requires that "no person shall *knowingly sell* any such article so mixed," &c.; for the sake of perfect safety for innocent persons, we should prefer to read "no person shall sell any such article *knowing it to be* so mixed," &c. The distinction, we apprehend, is obvious.

Dr. Cameron's amendment was one of the especial points on which the analysts had set their hearts: on this they were clean beaten. But another defeat awaited them—one perhaps which will mortify them more than any other. Clause 21 of the bill provided as follows:—

> The justices before whom any complaint may be made under this Act may, upon the request of either party, in their discretion cause any article of food or drug to be examined and analysed by the analyst of another district, who shall thereupon make the analysis as if he were applied to by any officer in his district, and may be required to attend to give evidence at the hearing of the case; and the expense of such examination, analysis, and attendance shall be deemed part of the expenses of executing this Act, unless the justices order the same to be paid by the complainant or the defendant.

This would have satisfied the analysts, or if a special body of referees were appointed, they desired to have the election of that body either wholly, or at least partially, in their own hands. But a suggestion had been made to leave such reference to the laboratory conducted by the Inland Revenue Board. That laboratory has been in existence for many years, and has most ably performed its very difficult task, not the less efficiently that it has done its work quietly. Its vigilance has been so continually exercised that there has been no chance for any profitable adulteration of excisable articles, while at the same time its action has been so reasonable that no class of manufacturers have ever had cause to complain of harassing in their legitimate business. Tradesmen felt that they could have perfect confidence in this body, and it was thought that with perhaps a little extension it might be made to serve as a sufficient check on the sudden discoveries which half-trained analysts have shown themselves too apt to make. The analysts, however, as a rule protested most strongly against having this laboratory to rule over them. Were their reputations, they asked, to be at the mercy of an impersonal staff of assistants, who, for aught they knew, might not even be Fellows of the Chemical Society? The question was discussed in the House of Commons last Tuesday night. Drs. Cameron and Playfair argued for the analysts' view, while Mr. Muntz, Mr. Sclater-Booth, Sir Henry Peek, Mr. Pell, Mr. Sullivan, and Sir Thomas Chambers all advocated reference to the Inland Revenue Laboratory. Ultimately the amendment proposed by Mr. Pell was carried with some slight verbal alterations, and the clause as quoted above now runs thus in the Bill:—

> The justices . . . . may . . . . cause any article . . . . to be . . . . analysed by *persons to be appointed by the chemical officers in the employment of the Commissioners of Inland Revenue, who shall thereupon make the analysis, and give a certificate to such justices of the result of the analysis; and the expense of such analysis shall be paid by the complainant or the defendant, as the justices may by order direct.*

Discussion on the bill, as far as the House of Commons is concerned, is now at an end. It passed through Committee on Thursday last, and it now remains to be seen whether the House of Lords will think it desirable to upset a piece of legislation which has been arrived at after unusually protracted consideration by a select committee of the Lower House, and also after very elaborate discussion by men necessarily better acquainted with the needs of the country than noble dukes or bishops can be. Mr. Sclater-Booth and Mr. Clare Read have shown a firm determination to produce a fair, workable, and efficient bill; and the former has really distinguished himself by his courtesy to all sides, as well as by his attention to details and his ready appreciation of all points submitted to him. The acknowledgments of tradesmen are also due to such men as Sir Henry Peek and Mr. Mundella, who kept the House of Commons from terrifying itself into a fever of passionate legislation in consequence of the perpetually repeated stories of the dangers incurred in taking food, drink or drugs.

OUR PATENT LAWS.

THERE are those amongst us who recollect by wearisome experience the devious windings which attended searching for patents under the old patent law; and when, with the veriest shadow of certainty, and nothing more, the novelty of the invention was guessed at or taken for granted, the grant had to be obtained, how such task was beset with difficulties, delays, and expenses, with which the rising generation are quite unacquainted.

Formerly the specifications of patents were engrossed in the Elizabethan character upon skins of parchment, which were fastened together so as to form a continuous document, one patent commencing where the previous one left off, and these lengths were rolled up into "rolls" of considerable length and bulk. These, being numbered and dated, constituted the only means of reference that existed before the year 1852. To examine a specification, its name and date must be known, and then it was a question in which of three offices to find it, whether in the Rolls Chapel Office, or in the Petty Bag Office, or in the Inrolment Office. When found, by dint of paying fees and wire-drawing time, the persecuted but persevering searcher had to decipher the cramped and cornered caligraphy with its peculiar *cs*, *as*, and *es*, to turn or continually unroll and roll up the massive bundle to examine the drawings, and to store up the knowledge thus painfully and laboriously obtained in his memory until he could disburden his mind outside of legal influence. But who does not recollect how the tiny root of a pencil and the equally smuggled paper were brought out under the table, quite furtively, and made to jot down the heads of description of a complicated machine or of a lengthy chemical process, and how this slight mnemonical assistance was often winked at by the officials themselves, more merciful than the red-tapism of the system under which they worked; and with or without such slight reminder, the nearest hostelry, or even the Rolls Yard, or the street itself, was the place of pouring out the treasured items of novelty upon a very humble piece of paper or in a well-worn note book. Now, these conditions are altered, and the dusty cobwebs of ancient legal forms are swept away into corners which are only accessible to the initiated, but which the public at large know not of. From the year 1617 to within six or seven months of the present time, the specifications are printed, the title, name, and date of each are classified and indexed, and a beautiful library, removed from the rude world by being near the sky, and tinted with pink and gold, is provided, free of charge, for the examination of specifications, and of scientific works useful to the practical man. Commiserating the condition of an inventor whose invention is doubtless intended to become world-wide in its applications if it can only be proved to be new, the Commissioners of Patents have still further facilitated search by providing able and polite library assistants, and by issuing abridgments of classes of inventions, these abridgments being drawn up by experts selected for special knowledge and training in each department of invention.

Not only in the matter of ascertainment of novelty is the present patent law superior to that which existed before the year 1852, but the obtainment of the grant is rendered easier of accomplishment, quicker in time, and less expensive than formerly. Prior to the passing of the statute 15 & 16 Victoria, cap. 83, the operation or process for obtaining letters patent in each of the three kingdoms, unopposed, was comprised in nine principal stages, or thirty-six separate steps, in seven separate offices; the expenses, in Government fees only, exclusive of patent agents' charges for attendance in various parts of the town, and for drawing up documents and drawings, amounted to about 110*l.* 7*s.* 8*d.* in one sum. So that formerly a patent of invention for the three kingdoms, England, Scotland and Ireland, could scarcely be obtained under 300*l.* or 400*l.*, coupled with a great deal of anxiety and expenditure of time. According to the present patent law, the administration of which is comprised in five Acts of Parliament,* letters patent, when unopposed, may be obtained for the three kingdoms in one operation, comprised in three principal stages, or fourteen separate steps, in two distinct offices, the Government fees being divisible into parts, payable at various times, according to the continuance of the grant, and amounting in the whole, for fourteen years, to the fixed sum of 175*l.* 1*s.* 6*d.*

Rather to follow out more perfectly the improvements commenced in 1852 than to initiate any entire novelty in the treatment of the great question of property in invention, Lord Cairns, in the beginning of the present year, introduced a Bill into the House of Lords intituled "An Act for Consolidating, with Amendments, the Acts relating to Letters Patent for Inventions." This Bill was ordered to be printed on February 12, 1875, and it contains sixty-one clauses and two schedules; it is, therefore, a bill of greater prolixity than any previous bill on the subject. The chief points in which it differs from the law now in force are:—1st. The appointment of examiners and referees to whom every application for a patent is to be referred in respect to definite legal and scientific points. 2nd. Power to limit the grant to seven years duration. 3rd. "Every patent shall be dated the day of the application." 4th. "No patent shall be granted in respect of a communication from abroad." 5th. The proceeding by *scire facias* to repeal a patent is abolished and a petition is substituted for the said process. 6th. A patent is revocable after two years from its date if not used, or if licenses be not given. 7th. There is a penalty for the unauthorised use of the name of the patentee or of the mark of the word patent. 8th. Terms may be settled by the Treasury for the use of patents by the Government. 9th. It is proposed to provide for the deposition of models (of the invention secured by Letters Patent) in a public museum. 10th. By dispensing with the stamp on the final specification, the total Government fees are reduced to 170*l.* 1*s.* 6*d.*

Several monograms of great practical worth, and tending to elucidate the position of the inventor and of that which he has to dispose of, have been published somewhat recently. The earliest of the two papers to which we shall direct attention in this place is that entitled "The Patent Laws," being a paper read by Mr. W. Lloyd Wise at a meeting of the Society of Engineers, on May 2, 1870; the other paper is that read by F. J. Bramwell Esq., F.R.S., in December last before the Society of Arts, entitled "On the Expediency of Protection for Inventions.' As these papers, by their just views, and considerable evidence of experience on the part of the writers, tend to clear the ground for unbiassed judgment, they will be freely used in this article. In the early grants of patents the privilege was too nearly associated with the idea of monopolies to be regarded in its true light, but one of the chief propositions that will guide the opinions here given is that an inventor's right of proprietorship in his own invention should be fully recognised. The first report (A.D. 1851) of the Society of Arts on the rights of inventors states, "the reasons for recognising the rights of inventors rest on much higher grounds than the encouragement of invention itself. They are precisely those which induce men to adopt civilised rather than savage life." In the decree of the French National Assembly, A.D. 1791, Renouard, 423, it is put forth that, "not to regard a discovery in industry as the property of the discoverer would be to attack the rights of man in their essence." These points are merely adduced to show that there are others besides ourselves who entertain a strong view of the reality of proprietorship in inventions. Our reasons for taking this view of the question, even in a more exalted degree than the generality of its advocates do, are based upon comparing this kind of property (the property of ideas and of realised novelties in mechanical construction, methods of working, and processes to produce results) with other kinds of property. The result of the comparison is to place the products of invention in the highest category so far as title to personal possession or individual ownership is concerned. So far are the rights of inventors removed from monopolies, that supposing an inventor to keep his invention secret and unworked, or what is even better for the benefit of the community, to work his invention at a high remuneration for its results, it would simply keep other people more or less out of a knowledge and benefit that they had not before, the fact being that the irksomeness of monopolies arises from the community being restricted from certain privileges hitherto enjoyed by them without stint. The *per contra* principle to that of the inventor's rights above indicated, which demands an equal amount of consideration, appears to us to be, that since our inventor by a patent seeks to secure legally a given proprietorship or title to possession which he may dispose of for a pecuniary consideration in various ways, the abuse of that ownership is to be well guarded against, one of the strongest arguments for this protective policy being that when an inventor, by his own act, enters the lists in the commercial world he must keep faith with his engagements in respect to negotiations involving this property of his, and give in spirit, in fulness, and in truth all that he has covenanted to give; and these points have to be considered quite as justly upon a higher basis as the rights of the inventor. If the inventor's rights are violated, this violation only involves injustice to one person, but if the inventor breaks faith, that portion of the public interested in the invention, involving many persons, suffers in an accumulated degree.

In respect to the Lord Chancellor's bill, there is a spirit of temerity about it which is evidenced by his speeches in introducing it into the House of Lords, and in its subsequent stages; for he hints that the time may come when patents may be dispensed with, and when these rights may no longer require recognition. For his lordship's edification it would be fortunate if he could have a holiday from his legal duties and make a pilgrimage through the workshops of Birmingham, Manchester, Sheffield, Leeds, Bradford, Nottingham, Glasgow, &c., when he would see how impossible it is to ignore property in inventions, or to believe in the decline of this principle. He would then realise that the direct product of the mind of man has a greater title to recognition, as being more immediately connected with the source whence we derive the inflowing of all thought, than the mere possession of lands, houses, or chattels. The introducer of the bill has not come forward as a good champion of his cause, or as a knight well mounted and having his lance in rest as against the opposition of falsity, but he has put forward this bill on account of the pressure from without, and without realising the immense force of progression that is at the back of improvements in practical science. There is also a want of knowledge that the eighth commandment applies most directly to that which the Almighty has given most interiorly to man, namely, his thoughts and ideas and the realisation of them; for these possessions, being the most recondite, require the most jealous and guarded protection. The public should never forget that the *bonâ fide* inventor is a blessing to his race and to the community; the difficulty is to provide by legislation for the case of the inventor not being *bonâ fide*.

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* 15 & 16 Victoria, cap. 83, A.D. 1852; 16 & 17 Victoria, cap. 5, A.D. 1853; 16 & 17 Victoria, cap. 115, A.D. 1853; 28 & 29 Victoria, cap. 3, A.D. 1865; and 33 & 34 Victoria, cap. 27, A.D. 1870.

The observations that follow will tend to the extension of the proposal of the appointment of examiners and referees. Under certain circumstances it will be shown in the sequel that seven years, or even less, will suffice for the duration of the grant. With respect to the date of every patent and to the abolition of communicated patents, we cordially agree; also with the substitution of a petition for proceeding by *scire facias*, the penalty for unauthorised use of the patentee's name or mark, and with the fair use of patents by Government on the one hand, and the reduction of Government fees on the other hand. The plan of depositing models has already been tried in the United States, and they have not found them advantageous; in fact, a well-written description, combined with a good set of drawings, is amply sufficient to render the most complicated invention quite clear.

The foregoing observations lead to the proposal of remedies for the defects of the bill. We propose that the fees be reduced to a minimum, especially during the early stages of a patent. Theoretically, we hold that there ought not to be any fees charged to the *bonâ fide* inventor; but, practically, the transition would be abrupt, and the payment of fees plays a certain part in determining the ownership of the patent, and in making the patentee feel that he is independent and has his position fully assured. We hold that the duration of the grant should depend upon the character of the patentees' invention, upon his profits already obtained up to a certain time, and upon his behaviour to the public, as manifested by the terms of his licenses and by his activity in the use and promotion of his invention.

To reduce these remedies to order:—Provisional protection might still exist, but the specification should be made public one month before the sealing of the patent, so as to enable a conscientious opponent to know what he opposes, instead of having to oppose upon surmise, or upon the title, as heretofore; for this purpose provisional protection might be extended to seven months. The examiners and referees should be of the highest class in each department of invention, and they might be augmented in number according to practical requirements. No hard and fast date of termination of a patent would be fixed, but a sum annually paid, and the passing of a triennial examination by the examiners and referees would be necessary for its continuance. By this process, which would not guarantee the position of the invention (but which would put the impossible inventions, such as so-called perpetual motion, out of existence, and would make the duration of others purely depend upon the patentee's good faith with the public), it would obtain a dignity and a reality which no invention has at present. One cause of terminating a patent might be that it was getting too large for one patentee to work, considering the profits already received and its wide application. The triennial examination would involve the history of the invention since the previous examination, both legally, commercially, and scientifically, and would disclose the profits as well as the improvements that every successful manufacture takes to itself from time to time after the first specification is filed. The continuance of the grant would be on the report of examiners and referees, who should append their names and titles to the report, and upon paying a fee, the patentee might have his invention re-examined by other examiners, in case he was not satisfied with his first examination, and this last examination should be final. The fees on the patent might be on an ascending scale, say, commencing at 5*l.*, and increasing by 1*l.* each year; by this plan 161*l.* will have been paid in fourteen years.

It yet remains to notice, with some respect and consideration, a plan suggested by Mr. Macfie, of Colinton, N.B. The idea is conceived in a most liberal and just spirit, but it appears to us thoroughly unpractical in its working; it is to substitute for patents a system of registration and rewards. The rewards may be applied for either before or after the complete working of the invention—in the first case only a small reward being given; but this method is so patronising, and has so little to recommend it to an independent spirit, besides being extremely difficult to carry out with justice, that, whilst acknowledging its kindly spirit, we cannot think that results of a satisfactory nature would ever come out of it, especially as the keystone of our creed is to secure to a patentee who is *bonâ fide* the full proprietorship of his own invention.

NORTHAMPTONSHIRE COFFEE.

To Mr. Joseph Young, of Leicester, who, it seems, is public analyst for Northamptonshire, is due the undying honour of discovering roasted acorns in coffee. According to this sapient chemist, Northamptonshire is the only English county whose inhabitants would fain mingle the husk of which the swine do eat with their morning cup. And Mrs. Mary Smith, of Daventry, was charged lately on Mr. Young's certificate with having ministered to the peculiar appetite by supplying coffee adulterated with 75 per cent. of the roasted acorns. Mrs. Smith was fined 20*s.* and costs. Afterwards Mr. George Kennedy, of Grimsbury, was charged with a like offence, the proportion of adulterant in his case, however, being only 20 per cent. The analyst's certificate ran thus:—"Percentage of ash, 3·68 per cent.; specific gravity of 10 per cent. decoction, 1·0068, equal to 16 per cent. soluble matter; farina or starch, none; sugar or saccharine ingredients, traces. Microscopic appearance most unsatisfactory. Remarks: adulterated with at least 20 per cent. of roasted acorns." Where the starch or farina had gone to, if there was 20 per cent. of acorns, Mr. Young did not explain. The defendant in this case, however, produced a counter certificate from Mr. Beeseley, an analytical chemist, of Banbury, asserting that there was no adulteration present in the coffee whatever. The bench adjourned the case, and chose Dr. Letheby as a referee. This chemist pronounced the coffee to be perfectly pure. This caused the collapse of the case, and the magistrates intimated that they might be induced to order costs against the prosecutors. So Mr. Young must content himself with fame instead of glory in reference to his discovery of roasted acorns in Northamptonshire coffee; but Mrs. Smith, and perhaps any other convicted tradesmen in that county, may fairly ask to have their sentence reviewed and their fines disgorged, while the trading community of the county generally might, not without reason, ask for the appointment of a somewhat less intrepid discoverer to the responsible post at present occupied by Mr. Young.

There was, however, one more case to follow. A prosecution had been commenced against Mr. John Rogers, of Thrapston (Northampton), who was also charged with having sold coffee adulterated with acorns. This case came before the magistrates on the 26th ult., but the prosecution asked permission to withdraw from the case, the analyst (Mr. Young) admitting that he had made an error in consequence of defective apparatus. The defendant's counsel, however, protested against the case being settled so easily, and the magistrates considered that it was only just that something more should be known in respect to such an extraordinary error. Dr. Meymott Tidy was then called, and gave evidence that, according to his analysis, the coffee was perfectly pure. Had there been acorns present to the extent of only 2 per cent., he said, it would be quite easy to detect them by means of the iodine reaction on the starch. He had examined. 640 samples of coffee, but had never seen acorns used as an adulterant. The bench dismissed the case, and allowed defendant's full costs, amounting to 20*l.* 8*s.*, the analyst's fee being sixteen guineas, the legal expenses two guineas, defendant's own expenses to and from London thirty shillings.

ANILINE INKS.

ALTHOUGH the aniline colours are capable of yielding a number of inks of various but equally brilliant hues, the violet is the only one which, in this country at least, has acquired any considerable popularity. With a few precautions, however, it is quite possible to produce other coloured inks which should be as popular as this. The mistake usually made is to use a solution too strong. This leaves on the writing a metallic tint, which annoys the reader as well as the writer. No really good black aniline ink has yet been prepared, and the pads of blotting paper soaked with aniline black, which were recently recommended to travellers in a paragraph with the authority of Dr. Boettger which lately went the round of the press, are something worse than useless. They half dissolve, but leave floating in the solution a quantity of fibres with a strong affinity for pens, and the consequence is continual irritation to the writer. A good red aniline ink can be made by dissolving 1 part of diamond fuchsine in from 150 to 200 parts of boiling water. About 6 parts of a thick solution of gum arabic, perfectly clear, may be added if desirable. But it is very essential for the quality of this ink to use the *diamond* fuchsine; the other kind yields a very unsatisfactory product. A magnificent green ink, far superior to that made from verdigris or other metallic greens, is made by dissolving 1 part of iodine green in about 100 parts of boiling water. If the tint is too bluish picric acid will turn it to a yellower shade. A fair blue ink is made from the aniline salt known as Paris blue, 1 part in 200 or 250 of boiling water. Violet ink is prepared by dissolving 1 part of aniline violet in 300 parts of boiling water. All these inks, it should be remembered, are very delicate and easily spoiled by admixture with other colouring matters. If a pen used for ordinary ink is dipped into an aniline ink, the latter loses its brilliance, and the colour soon fades entirely.

INSECT DESTROYERS.

A CORRESPONDENT of the *Scientific American* cares no more for vermin than, according to the old showman, Daniel cared for the lions. "I have not seen a bedbug or a flea in my house," he writes, "for many years. If an army of them were to be brought in, mercury would speedily exterminate them, but I think cleanliness the best and perhaps the only preventive. The common house fly I do not molest, believing that it more than compensates for its trouble by clearing the atmosphere of effluvia and the animalcules which always arise from the putrefaction of decaying substances during warm weather. So, also, with the birds, which are quite numerous here during the summer; instead of shooting them, or setting up scarecrows to frighten them away, I throw out every possible inducement for them to build their nests in my fruit trees. The birds capture a large share of the insects in the larval state, and thus the millers are prevented from depositing eggs for a future crop of worms. As to the loss of fruit by the birds, the latter are always sure to be on hand in force in the season of ripe fruit, whether they come early enough to take the worms or not. For the residue of insects which infest my vegetable garden, I find that the laboratory of the chemist furnishes materials fatal to them all, among which white hellebore and cayenne pepper are of the most utility; the bug or worm which cannot find vegetation unflavoured with these articles will seek its breakfast elsewhere, and leave my garden unmolested. A few drops of carbolic acid in a pint of water will clean house plants from lice in a very short time. If mosquitos or other bloodsuckers infest our sleeping rooms at night, we uncork a bottle of the oil of pennyroyal, and these insects leave in great haste, nor will they return so long as the air in the rooms is loaded with the fumes of that aromatic herb. If rats enter the cellar, a little powdered potash, thrown into their holes or mixed with meal and scattered in their runways, never fails to drive them away. Cayenne pepper will keep the buttery and storeroom free from ants and cockroaches. If a mouse makes an entrance into any part of your dwelling, saturate a rag with cayenne in solution and stuff it into the hole, which can then be repaired with either wood or mortar. No rat or mouse will eat that rag for the purpose of opening communications with a depôt of supplies."

THE GOA STONE.

SEVERAL correspondents ask about that Goa Stone alluded to by Daniel Hanbury in the fac-simile letter printed in this journal last month. The following extract from the "Pharmacopœia Bateana, 1688," translated by Dr. Salmon (1700) will give the desired information, and is curious if not useful:—

" *Lapis de Goa—Goa Stone.*

℞ Of the hyacinth, topaz, saphire, ruby, pearls	āā ʒj.
Emeralds	ʒss.
Oriental bezoar, white and red coral	āā ʒij.
Musk, ambergrise	āā ʒss.
Leaves of gold	40.

Make all into fine pouder, which bring into a paste with rose water and form into oblong balls not much unlike to little eggs, drying them well in the shadow: then with a limpet's shell, or some other thing of like nature, let them be curiously polished that they may have a gloss upon them S A. It has the same vertues with the former (Contrayerva): Besides which it is a Specifick against cramps and contractions of the nerves. Dose à ℈j. ad ʒss. or more."

On which Salmon remarks—

"'Tis true you may make it up with simple rose water but then it will be apt to break with the least fall; your better way will be to add a little mucilage of gum tragacanth, or jelly of hartshorn, or some such like, which being dryed will make the stone not only firmer but the better also to be polished."

Amongst its manifold recommendations is the assertion that it causes a lively presence, nimble wit, a pleasant countenance and a sweet breath.

THE PHILADELPHIA EXHIBITION.

The drawing given below represents the main building of the Exhibition to be opened next year at Philadelphia. The Exhibition will comprise, besides this, a large art gallery and many minor buildings. The structure shown in the engraving will cover more than 20 acres of ground, and will measure 1,880 feet by 464. To give a better idea of the size than mere figures can convey, we may mention that Cheapside and the Poultry, measuring from the Royal Exchange to St. Paul's Churchyard, are just about 1,600 feet in length.

The American Commissioners are very sanguine of obtaining a good show, and the English Commission has announced lately that applications for space have been encouraging. Nevertheless, they extended the available time until this date, May 15, an evidence that all the room at their disposal had not been exhausted. Both in England and France manufacturers have felt that to exhibit in Philadelphia while such high rates of import duty continued would not be wise commercially; and for this reason many of our most eminent firms have refused to enter on a competition which must be costly and may not be productive of anything more than a wider field of imitation of their products. This consideration has influenced many houses in our own trade, but we hope not so widely as to prevent a really good display on the part of England. America is a country of such boundless prospects that no effort should be spared to maintain and extend our business relations with her.

Some day she will assuredly enter on the seductive paths of free trade, and her already extensive purchasing capabilities will then be magnified enormously. We believe that those houses who take advantage of the opportunity offered them, and who will carry through their enterprise with spirit, will ultimately reap an abundant harvest in the markets of America.

CORN FLOUR.

This popular dietetic, now so largely manufactured and vigorously pushed by several opulent firms both in England and America, was first brought to public notice in the State of New York, in the little city of Troy. About the year 1850 a young and enterprising firm of druggists launched it, after a great variety of culinary experiments, under the title of "corn starch"—a badly chosen cognomen, as the result proved, the public not taking easily to the idea of eating "starch," and also from a commercial point of view, as the promoters were unable, after their product became a favourite, to protect themselves in the exclusive enjoyment of this title. To this day all the productions known in England as corn flour bear in America the title of corn starch. The dietetic value and cheapness of the corn starch, notwithstanding the prejudice against its name, won an early and large sale in America, and all the great laundry starch manufacturers put into the market rival products, and with such force of push and lavish expenditure in publicity as to nearly drown the efforts of the humble originators. Large and constantly increasing sales were made, and profits were satisfactory. Corn starch has now been in vogue a quarter of a century, and holds an established position.

In the year 1853 one of the originators of this edible came to London to arrange for its introduction into Great Britain, and among other parties who were approached on the subject was the late Mr. John Cassell, of Ludgate Hill. He at once listened to the proposition made, and after trying the "starch" in his own family without knowing the nature of it, or even its title, expressed himself as much interested in the product and convinced that it would have a great run in England. A multiplicity of other business seemed to have prevented his going into the matter practically, as he desired to do.

We believe that we are quite correct in stating that these introductory steps in America and England preceded by two or three years the efforts of the prominent houses who supply the demand to-day in England.

GIN AND ITS DANGERS.

There seems an almost inevitable tendency among scientific investigators to jump at the nearest sensational statement which offers itself. That this is the case with some of the very best of them will be proved just now; but, as we all know, it is a veritable passion with the mere recruits who feel it essential above all things to get their names in newspaper paragraphs, and can think of no easier means. A correspondent of the *Society of Arts' Journal* (A. Z.), who is evidently well conversant with the spirit trade, points out several instances of exaggeration in reference to the adulteration of spirits which are worthy of remark. First, with regard to fusel oil. This is often attributed to the Hamburg spirit made from the potato, and we are apt to take that assertion as an axiom. This writer tells us, however, there is not any other spirit submitted to the English market which more nearly approaches pure alcohol than this very much maligned potato spirit. The quality and purity of this spirit is proved from the circumstance that it costs the spirit-dealer as much as British spirit.

Then as to the adulteration of gin, Dr. Richardson, in the "Cantor Lectures" on alcohol, condemned the use of this spirit, because of the diuretic properties of the oil of juniper, which constitutes its principal flavouring. And Dr. Thudichum traces alcoholic madness to this and other adulterants, such as salt, pepper, mustard and turpentine. Let us just examine this note of alarm in respect to juniper. According to Royle's "Materia Medica" (we condense from A. Z.'s letter), the medicinal dose of oil of juniper varies from 4 to 6 minims; and according to the same work 1 lb. of oil is contained in 100 lbs. of berries. Now the proportion of berries used in practice to give the desired flavour to gin would be equal to 100 lbs. of berries to 3,262 gallons of spirit of the average strength of gin. Any considerable excess would render the gin unpalatable. So that 3,262 gallons of gin may be reckoned to contain 1 lb., or 17 fluid ounces, of oil of juniper; and therefore to get the minimum medicinal dose it would be necessary to drink nearly a gallon and a half of the spirit.

A. Z. very reasonably asks physicians to recognise that the true source of the evil rests in the alcohol itself rather than in its accidental associates.

SPIRITUAL HOMŒOPATHY.

In an ingenious and interesting article in this month's *Homœopathic Review*, Dr. W. B. A. Scott, whose name will be recognised as one of our own occasional correspondents, gives a number of illustrations from mental and moral pathology tending to show that the range of the homœopathic principle extends to all the emotions of the mind, as well as of the body. How, for example, asks this writer, do we treat a deep sorrow, arising, say, from bereavement? Not assuredly on what would be the *antipathic* principle of endeavouring to assuage the mourner's grief by means of mirth and frivolity. And we see, too, how often one mentally distressed finds his truest consolation by adopting the strictly homœopathic remedy of seeking the society of others similarly afflicted. By administering sympathy to these he finds his own grief, *so far as it is morbid*—that is, diseased—passes away. Shakespeare illustrates the same treatment more than once. A striking example occurs in the homœopathic "taming" of Katharine by Petruchio. The often-quoted lines, too, from "Romeo and Juliet" give the theory in its fulness:—

> One fire burns out another's burning,
> One pain is lessened by another's anguish;
> Turn giddy and be helped by backward turning;
> One desperate grief cures with another's languish
> Take thou some new infection to thine eye
> And the rank poison of the old will die.

Dr. Scott also quotes from Wordsworth the lines:—

> Could find no refuge from distress
> But in the milder grief of pity.

And from Locke, who recommends, in the case of a schoolboy neglecting his tasks owing to his fondness for cricket or other sports, that he should be *compelled to play at the same for a certain number of hours daily.*

The homœopathic principle, too, Dr. Scott thinks, explains the success of coquetry, and the philosophy embodied in the advice to

> Damn with *faint praise*, assent with civil leer,
> And, *without sneering*, teach the rest to sneer.

Without desiring to controvert entirely Dr. Scott's arguments, we cannot run with him into the conclusion which he tries to lead us to—namely, that the range of the homœopathic principle is as universal as life itself. There is a fallacy underneath most of the illustrations just quoted which it is not difficult to discover. In discussing the treatment of sorrow arising from bereavement, for example, Dr. Scott has evidently taken as a disease what is nothing of the kind. He would hardly call a broken leg a disease, we suppose. But the pain occasioned by an accident or a wound is nearer the physical analogue of the mental suffering which bereavement leaves than disease properly so termed can be. There is no sudden or specific cure for the pain in either case: it has to be borne, and though it may be that a sorrower is relieved to some extent by *sympathy*, that is something very different from *homœopathy*, as Dr. Scott quite well knows. But suppose a mind be clouded and gloomy, with no just cause—a true case of mental disease. Homœopathic treatment would be the provision of lugubrious and melancholy subjects of thought. We are disposed to think a little mirth and frivolity—the antipathic treatment, in fact—would be the wisest. The boy alluded to by Locke might perchance find his enforced occupation wearisome; but it would be the compulsion, not the cricket, that would disgust him. In the "Taming of the Shrew," again, Katharine's temper is merely a passion for annoying and terrifying those about her. When she finds her wild actions no longer have this effect she ceases them. What homœopathy is there in the treatment of her? St. Paul recommends a practice quite other than homœopathic. "If thine enemy hunger, *starve him*," would be the scientific treatment if we carried the range of the homœopathic principle into all departments of morality. The fact is, life is a more complicated affair than any one system can meet fully; but so long as we see human beings seek a cool breeze in summer, or a warm fire in winter, we shall not throw away all faith in the antipathic system of treatment.

PERSEVERANCE REWARDED.

A Texas newspaper asks us to believe that Mr. Hugo Byer committed an elaborate suicide during the month of February in the following manner—well calculated, as our far-away *confrère* naïvely remarks, to surprise the oldest medical man of the age.

On the 19th of that month he took two ounces of laudanum; on the 20th he swallowed another two ounces of laudanum and three ounces of chloroform; on the 21st he partook of two ounces of chloroform and one-third of an ounce of morphia; on the 22nd he took four ounces of chloroform, and on the 23rd he drank two ounces of chloroform and one ounce of chloral. Still he lived until the 25th of February, when, in spite of the innocuous type of the poisons dispensed by the Texas drug stores, he was still dragging out his existence. So much perseverance, however, must ultimately lead to results, and we are not surprised to learn that death at last closed "this strange eventful history."

PEANUT OIL.

The rapid extension of the cultivation of peanuts in the American States of North Carolina, Virginia, Tennessee, Georgia, and South Carolina is due to the use now made of them for the oil they contain. According to official agricultural reports, previous to the year 1860 the whole crop aggregated only 150,000 bushels per annum, grown principally in North Carolina; last season's product reached two million bushels, valued at 600,000*l*. As an article of food they are valuable, but in a commercial point of view the oil is much more important than the nuts themselves. This oil is in large demand, and answers for many purposes as a substitute for olive and almond oils; it keeps a long time without becoming rancid. The amount of oil contained in the nut varies according to latitude and other favourable conditions and circumstances, and is proportionately large.

All the oil comes from the "meat," the husk being of no value. The oil is extracted by pressure, and the pressed cake is used both as food for cattle and manure. The French colony of Algiers also supplies the port of Marseilles with large quantities of these nuts, from which the oil is expressed, and destined, we are permitted to imagine, to augment the supply of the olive oil for which that city is so great a market. The production of peanut oil in the United States dates back to the war, when it was used to a large extent for table purposes in the South, olive oil being almost unobtainable; it was also used quite generally at that time as a substitute for lard. The cake residuum was made serviceable also; after being roasted and ground it was used in place of coffee and chocolate, making a tolerable if not a desirable beverage.

REVIEWS
AND
Literary Notes.

Outlines of Proximate Organic Analysis. By Albert B. Prescott, M.D. New York: D. Van Nostrand. 1875.

It is a pleasure to see a work on this much neglected subject; neglected, no doubt, on account of the very crude state of chemical knowledge in the rapidly widening field of organic chemistry. One need not hesitate to pursue ultimate analysis on account of the likelihood of some elementary substances being as yet unknown; but proximate analysis, especially organic, must often be unsatisfactory, simply because the number of compounds that may exist is practically infinite. Most of the organic substances, however, with which the analyst has to deal are comparatively well known. The methods for arriving at the ultimate constituents have been brought to a high degree of accuracy, but much remains to be done in the detection and separation of the compounds built up by the mysterious agency of life.

This work begins with an account of the preliminary treatment to which a substance should be subjected in order to learn the proper course to pursue for the determination of its proximate constituents. The space devoted to this important part of the subject is less than would appear to be necessary, even assuming that the student already possesses a fair knowledge of organic chemistry. Suppose this book is placed in the hands of a student, and that he is given a mixture, say of starch and tannic acid, and required to determine its proximate constituents: if he follows his instructions he will take a portion of the substance and heat gradually to prolonged ignition in a glass tube open at both ends, or on platinum foil. He finds that the result of this experiment is described in a paragraph which refers him to 5A. On turning to 5A, he finds a list of non-volatile and volatile solids, with references to the paragraphs in which the properties and analytical reactions of the substances are described. If he only knew the composition of the mixture, it would be easy to turn to the proper part of the book, but this is just what he has to find out, and we cannot see that the work gives him the slightest assistance under the circumstances. It may not have been the intention of the author that the book should be employed in this way, but this is what is really required. More detailed instructions for the systematic examination of organic mixtures would greatly increase the practical value of the work.

The descriptions of the general properties of a large number of organic substances are complete and accurate. The qualitative and quantitative tests given are concise and practical. These, indeed, are the principal features of the work, and they are certain to be fully appreciated, as there is great need of a book containing the information that is so ably condensed in these pages. The part of the work devoted to the detection and separation of oils and resins contains a great deal of valuable information. The same remark applies to the chapter on the organic acids and bases. The characteristics of the alkaloids, and the best methods for separating and recognising them, are given in brief but accurate language. The glucosides, albumenoids, carbohydrates, and the alcohols and their products, are treated in the same manner; so that it will be seen the work occupies almost the entire range of organic chemistry.

Chemical Examination of Alcoholic Liquors. By Albert B. Prescott, M.D. New York: D. Van Nostrand. 1875.

This work is by the same author as that which we have just noticed, and is as it were an extension of the subject in one particular direction. It treats of the separation and recognition of the proximate constituents of genuine and adulterated alcoholic liquors. The first pages are occupied with an account of the way in which alcohol is produced, and the various chemical changes which accompany alcoholic fermentation. Then follows a chemical description of the alcoholic liquors of commerce—whisky, gin, rum, brandy, liqueurs, wines, beer, &c. Having explained the constitution of these beverages, and treated of the adulterants known to be employed in the preparation of the articles as sometimes found in commerce, the author proceeds to explain the method of conducting a thorough chemical examination of these liquors. Chemical analyses of this class present some peculiar difficulties. In many instances merely qualitative results are of little value, while it is almost impossible to obtain quantitative determinations with even approximate accuracy. Indeed chemistry can scarcely be considered a match for the fraudulent trader in alcoholic liquors, but with such a work as this of Dr. Prescott's and a general knowledge of chemistry there should be no difficulty in detecting any ordinary adulteration. The skilled chemist will find the work of great service on account of the numerous analytical methods that it contains in a very convenient form.

A Short Manual of Heat. By the Rev. A. Irving, B.A. and B.Sc. London: Longmans, Green & Co. 1875.

This little book is intended as an introduction to an important branch of physical science in its most modern form—heat as molecular motion. It is written in an attractive and interesting manner, is extensively illustrated, and in every way calculated to fulfil the intentions of the author. It treats of the nature and sources of heat, the effects produced by it—conduction, specific heat, radiant heat, and the conservation and dissipation of energy. This is just the book for the student of pharmacy, who has but little time to spare from his special branch of study. Everybody who studies any branch of science should know something about heat, and of all sciences it is most closely associated with chemistry. There is scarcely a chemical experiment performed without calling into play that mode of motion familiarly called heat. This important force is more frequently employed by the chemist than any other. Surely the science of chemistry is imperfectly studied when the study of heat is neglected.

The Commercial Hand-Book of Chemical Analysis. By A. Normandy. Enlarged by Henry M. Noad, Ph.D., F.R.S. London: Lockwood & Co. 1875.

We are glad to see Normandy's hand-book regenerated and modernised. It has done good service already, but it had no chance in the struggle for existence with advanced text books of a similar nature. The need for simple instructions for testing the quality and purity of commercial articles is often felt when the expense and trouble of a regular chemical analysis is not considered desirable. And it must frequently happen that adulterated articles pass from hand to hand untested, because it is considered too difficult an undertaking for any but the professional chemist. With the assistance of this book most persons of average intelligence could easily obtain such information as is usually required for commercial purposes. The work has also other adaptations of a valuable nature, such, for example, as arise from the information that is given about articles of domestic consumption—bread, beer, butter, milk, wine, &c. The pharmacist will find the book very useful on account of the amount of space that is devoted to articles in which he is specially interested, and which are frequently adulterated in a very wholesale manner. Another reason why a work of this nature is valuable to the pharmacist is that he usually possesses a sufficient knowledge of chemical manipulation to enable him to conduct the experiments described. Where the services of an experienced analyst are not easily obtained, the pharmacist is sometimes called upon, and often finds that he wants the very information that this book gives in a very agreeable form.

Six lectures on "How to Teach Chemistry," by Professor Frankland, originally delivered to science teachers, will shortly be published by Churchill. They have been compiled and edited by Mr. George Challinor, F.C.S., from notes, and have been revised by Dr. Frankland himself.

The seventh edition (38th thousand) of Dr. Ruddock's "Homœopathic Vade Mecum" (Homœopathic Publishing Company, Finsbury Circus) is to hand. The articles have been touched up to latest dates, all sources, allopathic as well as homœopathic being used by the author so as to get the benefit of all minds. The book is exceedingly well arranged, and for family use as a homœopathic manual we know of no better.

The widows of Sir Arthur Helps and the Rev. Charles Kingsley are each to have a pension of 200*l.* per annum from the Civil List. Considering the earnestness with which both these distinguished authors advocated prudence and frugality as among the adorning virtues of British workmen, it is a melancholy comment on the dearness of provisions to reflect that neither left his wife in a sufficiently independent position, though one as Clerk of the Council, and the other as Rector of Eversley and Canon of Westminster, had exceptional opportunities of laying by a small fund to provide for contingencies.

A very important "Cyclopædia of the Practice of Medicine" is being published in Germany under the supervision of Dr. H. von Ziemssen, of Erlangen. Some twenty or thirty of the most eminent German doctors are engaged on it, and it is intended to cover the whole field of clinical medicine according to the best science of the present day. Messrs. Sampson Low & Co. have arranged with the German publishers to bring out an English edition of the same work, and they announce an imposing list of British and American translators, all of them connected with the medical profession. The work is to be completed in fifteen volumes, which will be published by subscription at a guinea the volume.

The "Directory of Manufacturers of Great Britain and Ireland," fourth edition (Barker & Co., 75 Fleet Street), is just published. This work, we think, cannot fail to take a permanent place in commercial literature, and to merchants and general buyers its information will be of daily value. It classifies the manufacturers of this manufacturing empire first under the division of their products, and secondly under the town. A feature of this addition is that everything it contains, down to the advertisements, is printed in English, French, and German. There are errors and omissions in the work, of course, but not to nearly such an extent as we should have expected. We give this directory a hearty welcome.

Messrs. Novello & Co. have brought out a new musical journal happily entitled *Concordia*. It has very lofty objects; is to be "conducted in the interests of art alone;" and if any sordid carping critic, "eager to discover a lower motive than the highest," should insinuate that the journal has been established "under the guise of a public enterprise to subserve private ends," the proprietors announce once for all that they will not trouble themselves to reply to such a charge. This is very grand indeed, and should serve as an example to all present and future journalists. But the interests of art are not likely to be advanced much by rescuing from well-deserved oblivion the stupid verses which in the first number are dignified by the title of "Witty French Songs of the Last Century."

The omniscience of the *Daily Telegraph* was wonderfully displayed last Wednesday week in an article on the sad death at Glasgow occasioned by the dispensing of strychnine instead of santonine. After narrating the facts of the case, the writer plunges into a narrative of the ancient disputes between Apothecaries' Hall and the College of Physicians, which had as much to do with this case as had the Trojan War. The unsophisticated reader who studies this article will discover that the unfortunate assistant to a Scotch doctor who made the mistake held a "Scotch certificate" from the Apothecaries' Hall of London, which, it seems, is the body duly authorised to grant "dispensing licenses" to chemists and druggists. It is not to be expected that the public should be fully conversant with the technicalities of the Medical and Pharmacy Acts; but a paper which prides itself on getting intelligence from the heart of Africa, not to mention Khiva, might at least manage to arrange for accurate information respecting the status of medical practitioners and chemists and druggists.

Mr. Albert Ager, "late medical dispenser to the Surrey Dispensary," seems to think in rhyme. This is his misfortune rather than his crime, but the matter assumes a different aspect when he comes to print his meditations and offer them at one penny each. Under the title of "The Poetry of Health," this gentleman writes thirty verses, of which the following are specimens :—

> If you are troubled with a cough,
> And thick phlegm your throat does stuff :
> Take some squills, ipecacuanha,
> And nitre in a regular manner.
>
> When infants' eyes and nose drizzles
> With red rash—oft have the measles ;
> Keep them warm, give saffron tea,
> And a powder—soon well they'll be.
>
> When you have an attack of bile,
> Out-pour a dose of castor oil ;
> If of plethoric habit—ought
> To take a blue pill and black draught.

Future ages shall not say that this journal by neglect or unkind criticism checked the development of a genius springing from our own ranks.

"A History of the Conflict between Religion and Science," by Dr. Draper, of New York, forms one of the most recent additions to the International Scientific Series (H. S. King & Co.). What right it has in such company it is not for us to say. As far as we can see the publishers might just as reasonably include works of poetry or imagination in their series as works of history. But this point is of small consequence. The work is there, and both in England and America is likely to acquire considerable popularity, partly from its unquestionable literary merits, and partly from the interest which its subject has in recent years attained among all classes of educated and semi-educated readers. The author seems to hold very decided and exalted notions of his own qualifications for the task he has undertaken. He enumerates in the preface his previous achievements both as a scientific and as a historical writer, and he undertakes to give a "calm, impartial, and philosophical" *résume* of the "conflict," trying, he says, to identify himself with each party to it. In this laudable effort we are sorry to say that in our very humble opinion Dr. Draper has not succeeded. We are not at liberty in this place to enter on anything like an exhaustive discussion of the subject, but we will endeavour in a few sentences to suggest the justification we should offer for this belief.

The author, as it seems to us, starts falsely when he assumes that religion and science have always been and necessarily must continue in conflict. It would be more philosophically correct to represent these as manifestations of *parallel* but not *opposing* faculties in man's nature. The representatives of each have no doubt often come into collision, and it is perfectly competent for any author to write the story of their various combats. But with the exception of those who claim an "infallible" church, no one is bound to defend all the errors which his ancestors in faith may have stumbled into in their gropings after truth. We should consider it monstrously unjust to saddle science with all the aberrations of its professors from early days till now; and yet this, taking the subject reversely, is precisely how Dr. Draper treats religion. He credits religion with every black and cruel action that has ever been perpetrated in its name, while he coolly claims for science all the ameliorations which characterise modern in opposition to ancient society. The abolition of slavery is counted among its triumphs just as definitely as the locomotive, gas-lighted streets, and book-keeping by double entry! So far as we can remember not a single good word is said for religion from one end of the book to the other. And this is what the author chooses to term an impartial history! From this general statement we ought perhaps to except the sketch given of the rise and progress of Mahommedanism, which seems to be the one form of religion which Dr. Draper regards with affection. The chapter on this subject is distinguished above the rest of the book by its wild carelessness of critical truthfulness. "Shall we speak of this man with disrespect?" asks the author at the conclusion of his story of the life of Mahomet, in narrating which, however, he discreetly chooses to "pass over his stormy life," and supplies his readers instead with a few anecdotes of doubtful authenticity, which after all only tend to show that the *soi-disant* prophet was what we should now call a solemn prig. Before we decide not to speak with disrespect of this "Arab thief like Satan bold," as Wesley termed him, we must get an entirely new history of his career. At present we are not much disposed to veneration towards a man who authorised brigandage and assassination, robbed friends of their wives, and for pecuniary considerations was ready to grant pardon of sins prospective and retrospective. His ablest modern historian, Weil, regards him, too, as something of a coward, and certainly as an irresolute vacillating prophet; so that perhaps even Wesley is a shade too complimentary. Certain it is that the rapid spread of Islamism was due vastly more to the energy of the fiery convert Omar than to the virtues of Mahomet; and yet in Dr. Draper's account Omar is hardly mentioned, for fear, perhaps, lest the glory of Mahomet should be eclipsed.

This is an instance of how, in our view, Dr. Draper has managed to give a false tint to history. As we read his pages we find no trace of that impartiality which is so loudly promised in the preface. On the contrary, there is continual evidence of *parti pris*, of ungenerous suggestions, in the suppression of as well as in the prominence given to events bearing on the subject. A truer appreciation of history than is exhibited in this book would have treated the early contact of the Christian church with the Alexandrian schools not so much as a conflict as a fusion. The gradual growth of dogmatic theology and the difficulties that ensued would be, according to this view, no less due to science than to religion. Had Dr. Draper so read history he would not have written this book, but he might perhaps have given us a more valuable because a truer treatise, tracing the slow but certain development of truth and harmony from what seem to be incompatible and discordant elements.

JOHN F. HENRY, CURRAN & Co., of New York, have recently arranged with Van Duzer & Richards, 114 and 116 Southampton Row, London, the exploiters of Mrs. Allen's hair preparations, to represent them in this country. Henry's house is the largest in the world in the patent medicine line, and we notice that they have recently added a "drug department" to their already varied sections. Their price list, which is supplied by the agents here, is a very handsomely executed one, and gives some insight into American trade. European specialists desirous of opening a trade with American druggists should consult this firm.

Correspondence

TRADE WITH AMERICA.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I beg to ask once more the hospitality of your columns to supplement my letter of last month by some suggestions which I hope may be of utility in developing trade with Transatlantic dealers.

Time was, and not many years since, when Boston and New York firms transacted all the import business in drugs, chemicals, specialities, &c., and the interior cities were compelled to obtain their supplies from one or other of these seaports.

British, as well as continental, manufacturers of chemicals, &c., generally had a single representing house in one of these ports, which held stock, and supplied the trade in lots as wanted for current orders. However simple and safe this plan may have been, its natural effect was to limit business to actual demand. Wholesale houses took no interest in encouraging the sale of foreign goods, as they held no stock, and profits were generally light. The small jobbers in the interior cities were unable to deal at all in this class of goods, and therefore none of their following did any business in them.

The tendency on the part of New York, Philadelphia and Boston jobbers has, for the last fifteen years, been to run their trade with light stocks of goods, filling in from day to day the deficiencies occurring on orders; while the rising wholesale houses in the Northern, Western and Southern trade centres have, owing to their isolation and daily necessities, been compelled to carry enormous accumulations of every conceivable item required in the trade. This onerous load has proved fatal to weak houses, but an advantage to strong ones, and the result has been that we find to-day in such cities as Albany, Troy, Buffalo, Pittsburg, Cleveland, Detroit, Cincinnati, Louisville, St. Louis, Chicago, Milwaukee, Baltimore, Richmond, Nashville, Memphis, Charleston, Savannah, Mobile, New Orleans, Galveston, San Francisco, and many others, drug firms whose annual sales and stocks of goods rival those of the three large cities on the Atlantic coast.

It is with the old-established and wealthy firms which exist in each of these places that the British exporter should place himself in direct communication, cutting off all exclusive and special agencies, and aiming at establishing direct business with as many as possible of the "A 1" firms in the flourishing cities named, as well as many others. All these firms now do a business in direct competition with the seaboard centres, and they are quite open, from motives of rivalry as well as profit, to do *direct trade.* One hundred of these firms, or even a quarter of that number, keeping a fair stock of any British speciality adapted to the American market, would at once increase the demand in a very important ratio.

All well organised wholesale drug houses in America have elaborately arranged sample rooms, where stock is shown up in a very effective manner, and sales to buyers, who very often come personally, are thereby much increased. New articles are thus put forward, and old ones kept in view.

There are several British productions which are equally well manufactured in the States to-day; but in point of fact they number but few in comparison with the whole number. Skilled labour is still too dear in America to compete on the whole line.

There exist in London, Manchester, and Glasgow branch offices of highly reputable American firms, who give "ratings" of the leading business houses in all branches at a moderate annual outlay, and by their aid the standing of clients can be determined with great accuracy.

It is right to say that there can be no question of the mercantile honourability of the best grade of houses in the United States of the class I am writing of. They are quite equal in probity and regard for their good name to the same stamp of merchants in any part of the world.

The drug trade is essentially a Conservative one in the States—failures are rare and the greater number of the houses are now of old-established date, and possess abundant capital for carrying on their business. Business can be done with such houses on open account, or, if an object to them, they will pay for shipments by bankers' bills at ninety days. A little more confidence on the part of British exporters in this grade of houses would, I believe, result to their advantage, by inspiring an increased desire to become larger distributors of goods. The total importations of foreign merchandise into the United States from all countries for the last eight years have been in round figures *eight hundred million pounds sterling*. I give the years separately :—

Year	£
1867	80,000,000
1868	72,000,000
1869	83.000,000
1870	90,000,000
1871	105,000,000
1872	115,000,000
1873	140,000,000
1874	115,000,000
	£800,000,000

The duties received by the Government upon the imports *in gold* aggregated *two hundred and ninety two millions sterling*. The lion's share of these imports were British goods. (I have not the statistics at hand to give the exact figures.)

The year 1873 was a very flush one, as will be seen, and it is quite in the ordinary course of events that a pull-up should ensue. The great absorbing power of the people will, with the fast augmenting population, soon leave these figures in the background. The enormous augmentation of the steam fleet between British and American ports has reduced freight charges nearly one half, and this is an element in favour of the expansion of business of considerable importance, as the former steamer tariffs were on many kinds of goods excessive.

Obviously buyers from these distant cities cannot afford the time, and it would not be profitable, expense taken into view, for them to come personally to Europe to make purchases. Trade advertisements, circulars, price currents, and correspondence prolifically used offer all the facilities requisite for "breaking the ice" with them.

The approaching Grand Exposition at Philadelphia will offer an excellent opportunity to exhibit special productions: it cannot be doubted that nearly all the business men in the Union will visit it.

In conclusion, Mr. Editor, let me hope that my somewhat rambling observations will aid in drawing increased attention to the ways and means of working up business between the two countries, and that my crude hints may at least set the fertile minds of your own circle of exporters to devising, each for himself, additional machinery for reaping in the golden commercial harvest which, in spite of occasional reverses, always awaits them the other side of the Atlantic.

Yours very respectfully,

London: May 11, 1875. SPREAD EAGLE.

THE CHEMISTRY OF THE TAR ANTISEPTICS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I note in your March issue replies by Messrs. Bowdler and Bickerdike to my strictures on Mr. Bickerdike's paper on "The Chemistry of the Tar Antiseptics," but in the *Pharmaceutical Journal* of February 20 a preliminary letter appears from Mr. Bickerdike on the same subject. I can only account for the difference in tone of the communications in question by the supposition that in the interval between Feb. 20 and March 15 further experiments had forced upon the writers the conviction that the ground taken up by Mr. Bickerdike in his communication on the hygroscopic properties of pure carbolic acid was untenable, and therefore they felt themselves obliged to adopt the proverbial advice of attorney to counsel in a bad cause, "No case, abuse the plaintiff." As I confess myself no master of vituperative composition, I will in this letter merely summarise for your readers the points at issue, clearing away, if possible, some of the "fog" attempted to be thrown over the matter by your correspondents, Messrs. B. & B. In my previous letter criticising Mr. Bickerdike's paper I made nine distinct allegations of incorrectness of *matter*, not of *detail*. Of these allegations seven are either tacitly, partially, or altogether admitted by Mr. Bickerdike to be correct; the remaining two I deal with as follows:—

Readers of Mr. Bickerdike's communication will note for themselves, no doubt, the unfair and loose manner in which the experiments made with a view of showing the non-hygroscopic properties of phenol as compared with cresol have been carried out. Mr. Bickerdike takes 3·99 grms. pure phenol in fragments and 6·42 grms. cresol, and exposes them to similar hydrating influences: that is to say, in the case of the phenol he exposes a smaller surface by over 60 per cent. to the hydrating influence than in the case of the cresol, supposing it to be possible to expose the cresol in a similar fragmentary form. Further, in hydration (by absorption) of fragmentary phenol, unless the surrounding temperature is over 63° Fahr., the surface being first transformed into the solid hydrated phenol naturally retards to some degree the process of thorough hydration, while in the case of cresol no such difficulty occurs, as by the law of diffusion of liquids a fresh surface is being constantly exposed to the hydrating influence for hydration in its turn. Again, comparative experiments made in the open air, with a very volatile body like pure carbolic acid, and a much less volatile body, cresylic acid, can but give fallacious results. Had Mr. Bickerdike's experiments been carried on with pure carbolic acid in a high state of division, say as "granulated absolute phenol," and under conditions in which comparatively little volatilisation of the acid itself could take place, he would have arrived at very contrary results. Under these conditions I have exposed pure carbolic acid, and find that in two days the increase of weight by absorption of water amounted to over 5 per cent., even although the thermometer during the whole of the experiment indicated a surrounding temperature under 45° Fahr., this 5 per cent. increase not representing the total amount of water absorbed, but being independent of the loss still occurring from volatilisation, the resultant product constituting in fact the crystalline hydrate of phenylic alcohol (having its characteristic fusing point). In Mr. Bickerdike's paper of the 20th ult. he states that in case hydration of pure phenol takes place by exposure, the melting point of the phenol should be materially depressed. I have applied this test to a number of samples of "absolute phenol" supplied to the trade by Messrs. Bowdler & Bickerdike, and coming into my hands in unopened packages, and find in no one sample a higher melting point than 98° Fahr., the bulk of the samples melting completely between 92° Fahr. to 94° F., the true melting point of pure carbolic acid being 108° F. No doubt Mr. Bickerdike will inform your readers whether this low melting point is due to absorption of water in the process of manufacture, or to the presence of other impurities in the "absolute phenol." With regard to the boiling point of pure phenol, as the original discoverers and manufacturers of this product, Dr. Calvert and myself have, I think, without being extravagantly egotistical, some claim to be regarded as *the* authorities upon its properties. I have no means, from lapse of time, of testing the conditions under which the results of Messrs. Dale & Schorlemmer were obtained.* With regard to Mr. Bowdler's letter I have but little to say. Mr. Bowdler states the paper was not read for trade purposes. If so, I would ask:—

1st.—How is it that the name of the introducer (Dr. Calvert) of pure phenol for medicinal purposes is entirely ignored.

2nd.—How is it that the report of the *Pharmaceutical Journal* on Mr. Bickerdike's paper has been reprinted and distributed as a circular amongst the trade.

3rd.—How is it that each package of "absolute phenol" bears a label referring to the report of the said paper in the *Pharmaceutical Journal*.

Mr. Bowdler's information on one point is very inaccurate. "I have never been in the employ of Dr. Calvert, or connected with him in any way, except as pupil some twenty-five years ago, and subsequently for many years as partner." He is, however, sufficiently informed to be able to state a fact now pretty generally known to the trade, that by the wish of Mrs. F. Crace Calvert, the widow of the late Dr. Calvert, who has a heavy interest at stake, I "some time back resumed my connection with the firm F. C. Calvert & Co." Mr. Bowdler's information as to Dr. Calvert's paper on crystallised phenylic alcohol is, to say the least, rather antiquated, as the product in question was well known to all the members of our firm (F. C. C. & Co.) in 1863, two years previously to Dr. Calvert's published description of the product. With regard to the letters patent, Messrs. B. & B. (if they purpose to manufacture pure carbolic acid) would be well advised to apply for a license to manufacture under the same, as they certainly do not seem to grasp the legal bearing of the question, probably from lack of accurate information upon this as other matters.

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* Since writing the above a letter has appeared in the *Pharmaceutical Journal* from Dr. Schorlemmer fully confirming my statement on this point.

One more point and I have finished with Mr. Bowdler. He has misunderstood my allusion to his having been some six months in 1867 chemist at Dr. Calvert's works. I certainly never intended to imply anything derogatory in *that fact*, but in the light of his confession "We have done this for the last seven years, according to the process of the late Dr. Calvert, with such modifications and improvements as experience has suggested" (such improvements, by the way, culminating in the production of absolute phenol crystallising between 92° and 98° F.) I may be pardoned if, adopting his Darwinian suggestion, I draw his attention to the fact, that by the doctrine of the survival of the fittest "birds of prey" are doomed.

In conclusion, I may state that as, according to Mr. Bowdler, the manufacture of a considerable quantity of carbolic acid has latterly been placed in their hands [consequently lost to our firm] it has become requisite that I should pay increased attention to business, and therefore, after this, I am sure your readers will forgive me if I trouble them with no further correspondence on this subject. I am, sir, yours, &c.,

CHARLES LOWE.

Manchester, March, 1875.

DR. CAMERON ON DISEASE GERMS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—Thanks for your promptness in complying with my request to ask your reviewer to point out the page in my book on hygiene in which I had expressed a doubt as to the existence of disease germs. I find that the contradictory statements referred to by your reviewer are in a chapter on water, and not—as I had imagined when I read your reviewer's criticism—in the chapter on contagion. Your reviewer states that I contradict myself because in one place I say that disease germs "undoubtedly" exist, and in another place I "suppose" them to exist. Turning to the "Imperial Lexicon," which happens to be nearest to hand, I find the following amongst other definitions of the meaning of "supposing":—"Laying down or imagining to exist, or be true;" "imagining," "receiving as true." The word supposing is one which may appropriately be employed to express one's belief in the existence of things of almost infinite minuteness, such as disease germs are believed to be. I plead guilty to your reviewer's charge of hasty writing. Owing to certain exigencies relative to the prompt publication of the book, it was written, printed, and brought out within the space of two months, though it comprises nearly 500 pages. I am glad, therefore, that the evidence of the haste with which the book was brought out is not more striking than that which your reviewer has discovered. Thanking you for your courtesy, and promising not to trouble you further on this subject,

I remain, dear sir, faithfully yours,

15 Pembroke Road, Dublin: CHARLES A. CAMERON.
April 22, 1875.

THE PHARMACEUTICAL COUNCIL.

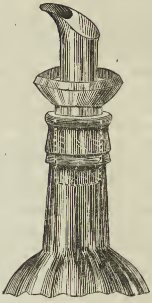
TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Allow, if you please, the insertion of this letter in the forthcoming number of THE CHEMIST AND DRUGGIST, on the subject of the next election of members for the Council of the Pharmaceutical Society. I see that there are two Leicester chemists nominated for the Council; and of course a town of a hundred and eight thousand inhabitants has some right to direct representation. On the other hand, it cannot expect to have two; and I want, just as it were *coram populo*, to weigh the respective merits of the candidates. As to Mr. Richardson, he has been a member of the Pharmaceutical Society for nearly twenty years, and is well known throughout England. Mr. Clark is a most estimable young man, but is much less widely known than Mr. Richardson, and has been a pharmaceutical chemist only since January 4, 1871, the date of receiving his diploma. I wish we could get both of them on the Council; but as I fear we cannot hope to do that, I submit that Mr. Richardson has a prior claim.

A LEICESTER MAN.

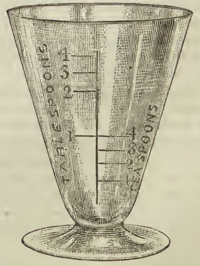
MAW'S SAUCE ECONOMISERS.

UNDER this title Messrs. S. Maw, Son & Thompson introduce a novelty which is well worth adding to the stock of sundries. People who are rich enough to eat sauce with their dinners will be only too glad to use one of these little inventions in the bottle. The object is not so much to save the sauce as to save the cloth from the dirty marks which generally result from a sauce bottle standing on the table. As will be seen from the drawing the principle is exactly the same as the moveable mouths adapted to oil bottles. In this case the "Economiser" is made of pure block tin, and sells retail at a shilling, neatly put up in little boxes.



LYNCH'S NEW MEDICINE GLASS.

IN consequence of some remarks by Dr. Leared, Messrs. Lynch & Co. set themselves to devise a graduated medicine glass with which the very stupidest person could not make a mistake between teaspoons and tablespoons. We think they have perfectly succeeded, but our readers can judge for themselves from the engraving. Dr. Leared had a patient who nearly killed herself by taking several table-, instead of tea-, spoonfuls of a mixture he



had prescribed for her. She used a graduated measure, but not being familiar with it she misread the graduation; and it must be admitted that it is perfectly possible to make such an error with the glasses as they are usually engraved. Of course it is very stupid, but the proneness of the human mind to choose the wrong whenever there is the possibility of a selection must not be forgotten. The peculiar shape of the new glass is also Dr. Leared's suggestion. He considers it much more convenient for a patient in a recumbent position than is a glass with a long stem.

TOUGHENED GLASS.

A most notable discovery has recently been perfected by a French gentleman, M. François de la Bastie, which promises to revolutionise the glass trade. Below we print an extract from his English patent, which indicates the scientific basis on which this discovery is based, and the careful consideration which has been bestowed on it to make it practicable. Apparently all difficulties are now conquered, for though the material is not yet actually on the market, the toughened glass has been manufactured in sufficient experimental quantities to prove its applicability to all purposes for which glass is now used, and to many others for which it would be employed if it were not for its fragility. Vessels manufactured of the toughened glass, though they cannot be distinguished in appearance from those to which we are now accustomed, may be thrown about the room with the utmost carelessness, but no ordinary risks will injure them. With a tender thoughtfulness for long-suffering housekeepers, the inventor proposes especially the manufacture of plates and dishes, cups and saucers, and such like articles, either transparent or enamelled. To have these fabrics no longer liable to fractures and smashes is an important amelioration in domestic economy; but we imagine that the toughened glass is likely to prove of value in much wider spheres. It will stand any amount of heat, and vessels made of it can be placed on the fire without danger. Consequently, its employment in chemical factories in the place of lead, earthenware, platinum and silver, is, we imagine, a question of a very short time only. Glass pipes will probably replace those of lead for water, and for other purposes, and thus diminish the prospects of lead-poisoning, and indeed it is difficult to anticipate the limits of the application of this very remarkable discovery. The one purpose for which at present there seems some difficulty about applying the toughened glass is for window-panes, for the reason that when the glass has been toughened by M. Bastie's process it cannot be cut by a diamond, though it may be cut first and toughened afterwards. The glass can, however, be engraved by the ordinary methods, and cut on the wheel.

Essentially, the process consists in heating glass up to near the softening point, and then plunging it into a bath of oil or grease. But to bring it to perfection has needed the patient experience of seven long years. M. Bastie, who is a gentleman of fortune, is said to have made his discovery first some seven years ago. This was after many years of investigation. But though he seemed to have succeeded for the moment, it took two years more of continual experiments before the inventor could repeat his success. He knew he was on the right track, but had not found the secret of proceeding in detail.

The following is the quotation from the specification which has been already alluded to:—

"As the fragility of glass results from the weakness of the cohesion of its molecules, it may be expected that by forcing the molecules closer together, and rendering the mass more compact, the strength and solidity of the material should be increased. I have found that this cannot be effected by compression even when applied to the material in a fluid or soft condition. I have therefore applied to glass a system of tempering such as is usually applied to steel, and I will now describe the process and apparatus for this purpose.

"Fused glass dropped into water becomes greatly contracted, but, being shapeless, only objects of curiosity can be produced in this way. The sudden cooling in the water puts the glass into a state of unstable equilibrium in its constitution, so that the least shock causes it to break up, as in the case of Prince Rupert's drops. My object is to invert this result, to diminish or even to remove the extreme fragility of glass by tempering it by immersion in a liquid. In attaining this object two essential conditions have to be determined:—First, the point at which glass can be tempered without being put out of shape. I have found this to be when it is just at the heat where softness or malleability begins, the molecules being then capable of closing suddenly together, condensing the material when it is plunged in a liquid at a considerably lower temperature. Also glass, when it is thin, may be tempered at red heat even before becoming soft; secondly, the liquid to be employed for the immersion of the glass, being such as can be heated much higher than water without boiling. For this purpose I find oils and grease, wax, resin, and tar or pitch suitable. Having settled these conditions, I have devised the process or practical method of operating, and suitable furnaces and apparatus, which will hereafter be described.

"In carrying out the process it is necessary that the glass to be tempered should be raised to a very high temperature; the hotter it is the less is the risk of breaking the glass, and the greater is the shrinkage or condensation. Hence the advantage and often the necessity of heating the glass to the point of softening, which is attended by the difficulties that glass in the soft condition gets readily out of shape, so that it must be plunged almost without touching it, and that in plunging the hot glass into a heated combustible liquid the latter is apt to take fire, and cannot easily be extinguished, so that time and material are lost. These difficulties I have overcome by placing the tempering bath in immediate communication with the heating oven, and covering it so as to prevent access of air. The oven being charged with the articles to be tempered, these are pushed or caused to slide into the adjoining bath without handling them, and the liquid of the bath having no supply of external air is not liable to inflame.

"In order that the shape of the tempered articles may not be affected, particularly for flat glass, the floor of the oven is made to cant, so that when the glass is heated on it it is turned to a sloping position, and the glass slides into the bath along a surface therein arranged at the same slope as that of the oven floor. Small articles may be heated on the edge of the bath, and immersed by a slight push. The clearness of the glass may be affected by the dust of the furnace flame, which is apt to settle on the glass and chill its surface. I avoid this by heating the glass in a muffle, to which the flame has no access, being applied externally. Moreover, the shock of the fall of glass into the bath is prevented by fixing therein a sheet of wire gauze or asbestos fabric, or providing a bed of sand or other like material for the glass to fall on."

We ought to add that Messrs. Abel Rey Brothers, of Mincing Lane, are the agents of this invention for Great Britain. They inform us that it is their intention to grant licenses to glass manufacturers to carry out the process. The invention is patented throughout the world.

Mr. Wheeler, pharmaceutical chemist, of Hackney Road, sends us samples of a glycerine jelly, which we find excellent for the skin, chilblains, &c. We handed this sample to a gentleman who was able to put it to practical test immediately, and in a post or two following he wrote to us asking us to obtain for him "a pound" of the preparation. Mr. Wheeler supplies it in stoppered glass bottles to sell at 1s. each.

In the May issue of their Price Current Messrs. Southall Bros. & Barclay continue the publication of their valuable hints on the storage of drugs, &c. Speaking of Persian opium, Messrs. Southall say: — Its very acrid taste ought to prevent its being used as a substitute for Turkish. It would also appear to have peculiar intoxicating properties, from observations made by one of our customers, who supplied it to a number of persons and received not a few complaints that "it made them drunk."

Trade Memoranda.

Mr. A. J. Smith, formerly with Mr. Fouracre, of Taunton, has opened a business in the same town, at 43 North Street.

Stower's British Wine Company (Limited) announce that a further allotment of shares will take place on the 25th inst.

Piesse & Lubin, perfumers, 2 New Bond Street, have taken into partnership Mr. G. C. N. Piesse, son of the present head of the firm.

We have a word of commendation to record for the excellent lavender water prepared by Messrs. Samuel Foulger & Son, of 133 Saint George Street.

The injunction granted by Vice-Chancellor Hall in favour of Smith's Pectorine, reported by us in March last, was made perpetual on April 24, and defendant in the case (Mason) was ordered to pay the costs of the suit.

Mr. A. P. Towle, after 26 years' residence in the Stockport Road, Manchester, has removed to larger and more central premises in that city at 75 Back Piccadilly, where he now carries on his manufacture of chlorodyne and chlorodyne lozenges.

De Joy's cigarettes we can indicate as one of the best of the numerous race of asthmatic remedies which French pharmacists have issued. Messrs. Wilcox & Co., of Oxford Street, have the English agency of the "Cigars de Joy."

Messrs. J. Tompson & Co., of the Birmingham Vinegar Brewery, having regard to the many prosecutions which have occurred for selling alleged adulterated vinegar, now guarantee their vinegar to be genuine by affixing a registered label to each cask.

The first consignment of Californian honey into this country has been received by Messrs. Oliver, Hurt & Co., of Liverpool. It is greatly prized in America, where, on account of the delicacy of its flavour, it carries as high a price as 2*s.* 6*d.* per lb. in fancy jars.

A real novelty in the marking ink trade is something worth noting. Messrs. G. F. Kneen & Co., 148 Strand, advertise that they supply a first-rate marking ink in bulk, thus giving chemists the opportunity of putting up their own as required.

We think it worth while to call attention to the valuable veterinary medicines advertised in this journal by Mr. Thurston, of Long Melford, Suffolk. Foreign and colonial firms, as well as home druggists in the country, will find the agency offered by Mr. Thurston a valuable one.

"Insecten Tod" appears to be the most famous German fly-paper which Messrs. Lynch & Co., of Aldersgate Street, are introducing to the British trade. The ingredients—said to be poisonous to insect life, but harmless to man and domestic animals—are introduced into the pulp under steam pressure in the manufacture.

Mr. A. W. Gerrard, who has devoted considerable attention to the preparation of Charta Sinapis, as ordered in the British Pharmacopœia, has succeeded in producing an article of much elegance, and has established a factory at 153 Liverpool Road, London, N., in order to manufacture them for general sale. He supplies them in boxes to retail at 6*d.*, 1*s.*, and 1*s.* 6*d.* each.

The Hudson River Marble Mills, of Hastings-on-the-Hudson, propose to offer this season to mineral and aërated water manufacturers their pure granulated white marble from their quarries, through Messrs. Dows, Clark & Co., of Frith Street, Soho. They claim that the carbonic acid gas produced therefrom is perfectly tasteless.

Messrs. Feltoe & Sons, of Conduit Street, offer the agency for their "Spécialité Sherry" to chemists. They have made a point of introducing this wine to the public chiefly through the recommendations of the medical profession; it is, therefore, particularly appropriate that chemists should be their agents.

Messrs. Daniel Judson & Son, whose novelties are invariably useful, now offer some cheap little bottles, retailing from 1*d.* to 6*d.*, of soluble glue. The preparation is clean and easily applied. It has a pleasant odour of vinegar, and while it is much cheaper than the ordinary liquid glue, it is much more convenient than the old glue pot.

Terms.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of the Chemist and Druggist, and all correspondence relating to it must be addressed to the "Publisher of the Chemist and Druggist, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

Four-pint displacement apparatus, York Glass Company's, price 20*s.* C. B., 1 Russell Gardens, Kensington, W.

Ice cream soda apparatus, complete, 4 syrup. Apply to Mr. Horncastle, 2 Queen Street, Cheapside.

Burrows' patent rack for mineral waters, to hold 2 gross. Cost 40*s.*; will take 25*s.* Rastrick, Southsea.

Rotary pill machine, makes 1,000 per minute, nearly new, 5*l.*, cost over 50 dollars. 4/70.

25-oz. tin Howard's quinine. Best offer for cash. Pratt, Chemist, York.

About two gallons of fine raspberry vinegar. Smith, Chemist, Crediton.

Four 4½-lb. bottles Bishop's citrate of magnesia, 1*s.* 11*d.* per lb. 16/71.

Bentham's "British Flora," last edition, 1,295 original engravings, perfectly new, 35*s.* (cost 3*l.* 10*s.*) carriage paid. 31/71.

Southall's Materia Medica case, 15*s.*; Bentley's "Botany," 5*s.* 4 Broadway, Turnham Green, W.

Chemical apparatus for preparing for Minor; cost 32*s.* Price, 16*s.* A. P. S., 1 Windsor Road, Holloway, London.

Ether spray apparatus, foot bellows, tongue holder, new; cost 34*s.* Price, 18*s.* E. C. Higgs, 149 Friar Street, Reading.

"Pharmaceutical Journal" from 1857 to 1864, both inclusive. What offers? Royse, Chemist, Heaton Chapel, Manchester.

One dozen Cockle's pills; 1 dozen Brandreth's pills; 2 dozen Alcock's plasters, 1*s.* 1½*d.* sizes, at 7*s.* 6*d.* per dozen, carriage paid. 73/7.

Three-quarter oz. finest Assam grain musk, 50*s.*, cash; 28 lbs. syrup violæ, 1875, 14*s.*; Kelly's "Directory," six home counties, 1874, 30*s.* Tully, Rotherfield.

7 lbs. stable sponge, 5*s.*; Pulvermacher's chain, 29 in.; tincture press; sundries. Cash or exchange. R. C. Mason, Bromsgrove.

Dental lathe, complete, with ornamental iron standards, brass chuck wheel, &c.; cost 5*l.* What offers, in cash? "Alpha," Fore Street, Trowbridge.

A water-bed, 6 feet 3 inches by 2 feet 10 inches, with mattress and extra waterproof cloth. Offers wanted. Address, T. R. Burdon, Bury St. Edmunds.

Dentist's lathe, vulcaniser, teeth, rubber, tools, excising forceps, trays, blowpipe, &c., &c., all in good condition. Particulars for stamp. J. Jones, Rochdale.

The Chemist and Druggist for 1872, 1873, 1874; also Valentin's "Chemistry." What offers? Warwick, Chemist, Hartlepool.

Diagrams illustrating decompositions occurring in manufacture of pharmaceutical products. 2*s.* 9*d.*, post free. Used for Minor. Coombs, 16 Church Street, Leominster.

For sale, or would exchange for Attfield's "Chemistry," Dr. Buchan's "Domestic Medicine" and "Wonders of the Human Body," Le Pileur. X., Post Office, Chester.

Steam still, worm tub, stand, &c.; also 13 black glass wide-mouth store bottles, painted gold labels, hold 7 quarts each; 9 ditto hold 5 quarts each. Wilkinson & Co., Baker's Hill, Sheffield.

A number of books for Medical and Pharmaceutical Preliminary Examinations; Barlow's "Medicine," latest edition, half-bound, 6*s.*; box of mathematical instruments, scarcely used, 5*s.*, cost 7*s.* 6*d.* Address "Spes," Post Office, Woolton.

Two cases Chloralum, in powder and liquid, 6*d.* and 1*s.*; put up for shipment but never opened. Value 8*l.*; offered for half price. W. Edwards, Walker Street, Wellington, Salop.

56-lb. bell-metal mortar, 2 2-gallon carboys, with stands, 22 inches in height; 10 doz. 6-oz. flat long-neck bottles, and a few other goods. Very cheap. Apply, R., 90 Oxford Road, Reading.

Fifty-six 1*s.* and three 3*s.* Goulding's plant food; twenty 1*s.* chloralum powder; fifteen 1*s.*, fourteen 6*d.* and thirty-six 3*d.* Chapman's entire wheat flour. Gibson, Chemist, Whitefriargate, Hull.

Very superior microscope, by Pillischer, with concentric rotating stage, polariscope, 3 eye-pieces and other accessories, with or without objectives—cheap. Full particulars on application to J. Sargent, jun., Fritchley, Derby.

Bedept, 12*s.* 6*d.*; 3-pint tincture press, 7*s.* 6*d.*; British Pharmacopœia, 1864, 5*s.*; press to print 9 in. by 6 in., furniture, 2 lbs. type, pair type cases, 30*s.* T. Hurst, 15 Goodham Hill, Burnley.

Four window show carboys (Bohemian crystal glass, with cut stoppers), with 4 argand lights, frames, silvered reflectors, &c., 4*l.* the lot; counter show-case, 3 feet long, 35*s.*; drawers, 30*s.* W. R. Godfrey, 27 Judd Street, Euston Road, London.

Two show boards, 7 feet high by 5 feet, handsomely painted, new; one Horse and Cattle Medicines, with animal figures; the other Dispensary and Family Chemist, with distillery apparatus. Price, 5 guineas; cost 12 guineas. Apply, Wm. Winter, Prince of Wales Road, Norwich.

Aids to Minor Examination as follow:—Questions given at the Square, 2*s.*; Prescriptions do., 1*s.*; Herbarium, 2*s.* 6*d.*; Botany Note-book, 3*s.*; Dispensing do., 2*s.* 6*d.*; Guide to Minor, 1*s.*; do. to Equation writing, 6 stamps. "Minor," Mr. Tully's, Chemist, Rotherfield.

For sale, Hooper's patent lift bedstead; also central tube water mattress. The above will be sold, either together or separately, and are guaranteed perfect and complete, having only been used 10 days. Full particulars on application to G. Brown, Chemist, Sandown, Isle of Wight.

Mahogany knee-hole office table, 9 drawers, as Fig. 223 Maw's, 4 feet by 2 feet 3 inches, good as new, 6*l.* 10*s.*; mahogany circular office washstand, with white marble centre shelf without basin, never used, very massive, 25*s.*; flat plate show case, 3 feet 2 inches by 2 feet, 24*s.*; 2 sets counter scales, Fig. 1, p. 143, 10*s.* and 15*s.*; 9 1-gallon store bottles, new, with gold labels, 18*s.* Gibbon's "Rome," 12 vols., calf, 12*s.* the set. J. Floyd, Bury St. Edmunds.

Post free. Piesse's "Perfumery," 5*s.*; Fowne's "Chemistry," 6*s.* 6*d.*; "Enquire Within," 2*s.* 3*d.*; Paley's "Theology," 2*s.*; "Practical Chemistry," Orr, 3*s.* 6*d.*; Conolly's "Lunatic Asylums," 2*s.* 6*d.*; Steggall's "Celsus," with literal translation, 2*s.* 6*d.* (pub. 8*s.*); Erasmus Wilson "On Skin Diseases," 4*s.* 6*d.*; Hunt "On Cure of Stammering," 2*s.* No carriage. Miller's "Chemistry," 3 vols., second edition, only 25*s.*; Hooper's "Medical Dictionary," and Cooper's "Surgical Dictionary," 5*s.* the two (see also advertisements March 15, April 15). A. Davis, 161 Seven Sisters Road, London, N.

Soda water machinery, Dows, Clark & Co.'s patents, No. 1 generator, charges 12 gallons each operation, with pressure gauge and safety valve complete. A beautiful cabinet machine of highly-polished Italian marble, on mahogany stand, with 4 syrup taps, 1 draught tube, silver-plated fittings and screws; 2 5-gallon cylinders, agitating rack; 2 silver-plated tumbler holders, all nearly new and in thorough working order. Cost about 60*l.*, price for cash 35*l.* Reason for disposing, loss of warehouse room. Can all be seen at work if desired. Apply to J. Osborne, Chemist, Ashbourne.

7½ ft. long flat mahogany plate-glass show-case, 2 ft. 2 in. wide; bent glass show-case, 2 ft. 7 in. long, 17 in. wide, 8 in. high; 3 ft. long ditto; 3 feet long ditto with mahogany sloping shelf at the back; handsome square marble-top mahogany soda water stand; upright mahogany show-case, with desk; homœopathic show-case; handsome gold labelled specie jars; 3 doz. 4-lb. blue shop jars, gold labelled; 4 japanned oil cisterns; 4 nests shop drawers. Anything not here enumerated required by the trade, all particulars sent on application. Lloyd Rayner, 333 Kingsland Road, London, N. For other goods, see Miscellaneous Column.

WANTED.

Tooth-brush case, Maw's fig. 72; good condition. State price. Forbes, Chemist, Reigate.

Wanted, to purchase the November, 1872, number of The Chemist and Druggist. T. B. Groves, Weymouth.

Piesse's "Art of Perfumery," and Rimmel's "Perfumery." Full prices given. 36/70.

A soda-water machine, druggists' bottles and utensils. Chemist, 34 High Street, Putney, London.

Bentham's "Flora;" illustrated. State condition and price. 9/71.

Tooth forceps. Description and price, carriage paid, to 72 High Street, Wavertree, Liverpool.

Shallow pill boxes, 10,000 gross, cheap. Bell, Chesshire & Co., Wholesale Druggists, Brixton.

"Pharmaceutical Journal," from June 1 to December 31, 1873; clean. State price. 8/71.

Soda-water stand, with marble top. W. March, Chemist, New Brompton, Kent.

Chemist and Druggist, December 1862, June 1867, January 1869, March and April 1870. Saunders, Chemist, Reading.

Proctor's "Pharmacy," Roscoe's "Chemistry," Southall's "Materia Medica Cabinet." "Chemicus," South Normanton, Alfreton.

The entire (or part of) fittings of a chemist's shop, bottles, jars, &c., in good condition. Full particulars to Mr. Hunn, 101 High Holborn, London.

A particularly handsome chemist's shop has lately been opened by Mr. Skipper in Dalston Lane, close by the Dalston railway station. It is fitted throughout in mahogany, relieved by black ornaments, and the work is surmounted by an ornamental crest in chocolate and gold, which adds considerably to the effect. The work has been executed throughout by Mr. Filmer Kidston, of Duke Street, Bishopsgate, and reflects the highest credit on his taste and skill.

TRADE REPORT.

FOR the first time for many months the Board of Trade returns show an improvement in the exports as compared with the year previous.

By the official accounts it appears that the declared value of the exports of our native merchandise last month was 20,221,830*l.*, and that it exceeded the amount in April last year, when it was 19,432,270*l.*, by 789,560*l.*, for which advance we are chiefly indebted to the increased demand for cotton goods; several other commodities also exhibited an expansion, but this was counterbalanced by a falling off in other branches of trade.

That we have a long balance to redeem yet, however, before we can be sure that our commerce is really progressing is evidenced by the fact that the declared value during the first four months this year was 3,952,285*l.* less than last year, and 10,437,323*l.* less than in the corresponding period in 1873.

Shipping trade, however, is active just now, and home trade is also fairly alive.

There has been experienced a better demand during the past week for alkalies, and a tendency towards higher prices has been manifested. Crystals sell freely at 5*l.* per ton, and in some instances a point higher has been paid for immediate delivery. Bleaching powder is not in demand, and is now quoted at 10*s.* per cwt. Tartaric sells freely, and is firm at 1*s.* 6¾*d.* Citric quiet at 3*s.* 11*d.* Some business forward reported at less money. Oxalic dull at 6*d.* to 6¼*d.* Sulphur selling well at 10*s.* roll, and 11*s.* 6*d.* to 13*s.* for flour. Sulphate of copper selling well at an advance, 26*s.* being paid for ordinary make, first quality, while some special manufactures command 27*s.* to 28*s.* Chlorate of potash has been pressed for sale once or twice, and present quotations are not firm. Sal ammoniac very firm at 44*s.* to 45*s.* Quicksilver has now fallen to 12*l.* per bottle, and all its preparations have followed suit in the decline.

At the public drug sales held last week Cape aloes again declined, gamboge, gum arabic, castor oil, senna, and sarsaparilla brought about previous rates, while cubebs, coculus indicus, musk, and rhubarb were rather dearer, but gum ammoniacum was again lower.

The sale for iodine at last auction was divided between two brokers, one lot of 10 kegs being imported from Hamburg, and the other of 40 kegs direct from Iquique, but as the mark was the same and the quality nearly so for both, it looked like a try to see which could get best price: 8*d.* was, however, the figure all through. Opium, as usual, was put up, 170 cases in all, to let buyers know the prices without any real attempt to sell, though it appeared that some three or four cases were sold privately, one of these being perhaps the very best; a fellow case to it of fine, soft, shapely was bought at the highest figure, viz., 40*s.* It would have puzzled an examiner, to say nothing of a candidate, to say what one case was. It was bought in for 10*s.*, and the same remark will apply to two cases of what was catalogued as scammony, and which actually found buyers at 3*d.* and 4*d.* The crop of opium is reported very promising, and may be as much as 7,000 baskets, in which case there will be a long leap down. The Turkey offered was evidently the leavings of the market, and was altogether a very middling lot. Rhubarbs and sennas will probably be dearer. Some very wormy rhubarb found ready purchasers. The argument is that it does not matter when ground, the worm probably being regarded by mercantile firms as good medicine as the root. This worm, when it attacks rhubarb, behaves differently from his fellow who inhabits calumba or jalap. The rhubarbarian, if we may so call him, disintegrates and scoops out the whole structure of a piece, often leaving nothing but a shell containing a mass of dark looking *débris*; of course, this never gets sold to the retailer, but the rhubarb is used in some form or other nevertheless. As regards the calumba insect it is an open question if he does it any harm, but certainly he renders it unsaleable to the retailer. In this case also the root, if ever so wormy, or rather worm-eaten, is readily bought for manufacturing purposes, as instance one lot at last sale, each piece of which was nearly as full of holes as a sieve, but which sold for 16*s.*

Quinine is very firm, Howard's being chiefly bought up for Indian market. Digitalis is reported scarce crop, and will be higher. Jalap root very limited supply; 18*l.* wanted. Canary seed has gone to the handsome price of 250*s.* to 300*s.* per quarter. English oil of peppermint is again firmer, and promises to be dear. Cubebs too, are higher; camphor a little easier.

OILS.—Linseed has recently become a little firmer sales, having been effected at 25*l.* 7*s.* 6*d.* to 25*l.* 10*s.*; for May-June, at 25*l.* 12*s.* 6*d.*; and for July to December, at 26*l.* 5*s.* The tone of the market for rape also exhibits a trifle more stringency. Refined on the spot is: English, 31*l.* 15*s.* to 32*l.*; and foreign, 33*l.* Cotton has been in very limited demand, and prices have ruled in buyer's favour. For the best English refined lard, 71*l.* would be now accepted. The market for olive has been inactive, but no change has taken place in quotations. Cocoa-nut has attracted little attention at 43*l.* 10*s.* to 44*l.* for fine Cochin, and at 37*l.* 10*s.* to 37*l.* 15*s.* for Ceylon in pipes. Palm has sold slowly at 34*l.* 10*s.* to 35*l.* for fine Lagos; 63 casks of this description offered by auction were bought in at 34*l.* 10*s.* The nominal value of crude sperm is 110*l.* Whale is in fair request at 31*l.* to 35*l.*, according to quality; seal, 32*l.* to 36*l.* as to colour. Newfoundland cod has advanced to 42*l.* 10*s.* to 43*l.* Sales have been made of East India fish at 25*l.* to 25*l.* 10*s.* 24 tuns good African bought in at 35*l.*; and 24 barrels sardine at 31*l.* 10*s.* Turpentine has continued to decline, American spirits from 25*s.* 6*d.* to 24*s.* 6*d.* on the spot; whilst a good quantity has changed hands for the last six months at 25*s.* 6*d.* to 25*s.*, the market closing at 24*s.* 6*d.*

Petroleum oil has still a downward tendency, and has fallen from 9¾*d.* to 9*d.* on the spot, and from 10½*d.* to 10¼*d.* for the last four months; at the latter price a large quantity has found buyers.

WE ARE INFORMED by Mr. H. Bollmann Condy (inventor of Condy's Fluid, &c.), Battersea, that as he is continuing to supply his various proprietary articles made with the same care as he has always devoted to them, of the same strength and composition they have always had since their introduction by him, that his prices remain unaltered.

MESSRS. S. MAW, SON & THOMPSON introduce a cheaper and more compact form of their very popular "A 1" Odorator. The new form dispenses with the tube between the indiarubber ball and the bottle, as shown in Messrs. Maw's advertisement. Like the original, it is provided with the telescope tube, rendering it suitable to long or short bottles, and which has made the "A 1" perhaps the most successful of spray producers.

MESSRS. GOODALL, BACKHOUSE & Co., of Leeds, are introducing a new alimentary preparation devised by Dr. Arthur Hill Hassall, under the title of "Dr. Hassall's Food for Infants, Children, and Invalids." Special emphasis is laid upon its nutritious, self-digestive, and wholesome qualities, and we doubt not but that the union of the famous doctor with the eminent Leeds firm will be productive of an article which, both in a dietetic and commercial sense, will prove unusually successful.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mincing Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.

	1875.					1874.				
ACIDS—	s.	d.		s.	d.	s.	d.		s.	d.
Acetic ....per lb.	0	4	to	0	4½	0	4	to	0	0
Citric .... ,,	3	11	..	0	0	4	3	..	0	0
Hydrochlor......per cwt.	5	0	..	7	0	4	0	..	7	0
Nitric ....per lb.	0	5	..	0	5½	0	5	..	0	5½
Oxalic .... ,,	0	6¼	..	0	0	0	7	..	0	0
Sulphuric ...... ,,	0	0¾	..	0	1	0	0¾	..	0	1
Tartaric crystal.. ,,	1	6½	..	1	6¾	1	7	..	1	7¼
powdered ,,	1	6¾	..	0	0	1	7	..	1	7½
ANTIMONY ore ......per ton	260	0	..	300	0	200	0	..	240	0
crude .. per cwt.	36	0	..	0	0	0	0	..	0	0
regulus .. ,,	0	0	..	0	0	0	0	..	0	0
star...... ,,	56	0	..	58	0	49	0	..	50	0
ARSENIC, lump...... ,,	30	0	..	0	0	20	6	..	0	0
powder.... ,,	15	3	..	15	6	10	3	..	0	0
BRIMSTONE, rough ...per ton	155	0	..	160	0	127	6	..	145	0
roll .. per cwt.	10	0	..	10	6	9	9	..	0	0
flour.... ,,	11	6	..	12	6	11	6	..	12	6
IODINE, dry ....per oz.	0	8	..	0	8¼	1	0¼	..	0	0
IVORY BLACK, dry .. per cwt.	8	6	..	0	0	8	6	..	0	0
MAGNESIA, calcined..per lb.	1	6	..	0	0	1	6	..	0	0
MERCURY ....per bottle	240	0	..	0	0	395	0	..	0	0
MINIUM, red ...... per cwt.	24	6	..	25	0	25	0	..	25	3
orange .. ,,	37	0	..	0	0	37	0	..	0	0
PRECIPITATE, red . per lb.	4	10	..	0	0	6	2	..	0	0
white ,,	4	9	..	0	0	6	1	..	0	0
PRUSSIAN BLUE .. ,,	0	0	..	0	0	0	0	..	0	0
SALTS—										
Alum ....per ton	150	0	..	157	6	172	6	..	180	0
powder...... ,,	170	0	..	0	0	192	6	..	0	0
Ammonia:										
Carbonate...... per lb.	0	7	..	0	7¼	0	7	..	0	0
Hydrochlorate, crude, white .... per ton	680	0	..	0	0	650	0	..	0	0
British (*see* Sal Am.)										
Sulphate........ per ton	370	0	..	0	0	350	0	..	355	0
Argol, Cape ......per cwt.	87	6	..	93	0	87	6	..	97	6
Red........ ,,	74	0	..	85	0	75	0	..	82	6
Oporto, red. ,,	34	0	..	35	0	28	0	..	32	0
Sicily ...... ,,	60	0	..	62	6	52	6	..	57	6
Ashes (*see* Potash and Soda)										
Bleaching powd...per cwt.	10	0	..	0	0	12	0	..	0	0
Borax, crude...... ,,	40	0	..	60	0	45	0	..	70	0
British refnd. ,,	56	0	..	0	0	57	0	..	0	0
Calomel ....per lb.	4	4	..	0	0	5	9	..	0	0
Copper:										
Sulphate ....per cwt.	25	3	..	26	0	27	0	..	27	6
Copperas, green..per ton	65	0	..	70	0	65	0	..	70	0
Corrosive Sublimate p. lb.	3	8	..	0	0	5	0	..	0	0
Cr. Tartar, French, p. cwt.	113	0	..	0	0	111	0	..	112	0
brown ,,	92	6	..	98	0	95	0	..	100	0
Epsom Salts ....per cwt.	6	6	..	0	0	5	9	..	6	3
Glauber Salts .... ,,	6	6	..	0	0	4	6	..	5	6
Lime:										
Acetate, white, per cwt.	11	0	..	20	0	14	6	..	21	0
Magnesia: Carbonate ,,	42	6	..	45	0	42	6	..	45	0
Potash:										
Bichromate ....per lb.	0	6½	..	0	0	0	6½	..	0	0
Carbonate:										
Potashes, Canada, 1st sort ......per cwt.	34	0	..	0	0	36	3	..	36	6
Pearlashes, Canada, 1st sort ......per cwt.	42	0	..	0	0	0	0	..	0	0
Chlorate ......per lb.	0	9¾	..	0	0	1	0	..	0	0
Prussiate .... ,,	1	1	..	0	0	1	0½	..	1	1
red.... ,,	3	2	..	3	3	2	10	..	2	11
Tartrate (*see* Argol and Cream of Tartar)										
Potassium:										
Chloride......per cwt.	7	0	..	0	0	6	9	..	7	0
Iodide ....per lb.	11	0	..	0	0	14	9	..	0	0
Quinine:										
Sulphate, British, in bottles ......per oz.	7	4	..	0	0	7	6	..	0	0
Sulphate, French ,,	6	9	..	6	10	7	6	..	0	0
Sal Acctos ......per lb.	0	9	..	0	10	0	10½	..	0	0
Sal Ammoniac, Brit. cwt.	44	0	..	45	0	44	0	..	45	0
Saltpctre:										
Bengal, 6 per cent. or under ......per cwt.	19	6	..	20	3	19	6	..	21	0
Bengal, over 6 per cent. per cwt.	18	0	..	19	3	17	0	..	19	0
British. refined ,,	23	9	..	25	0	26	9	..	27	6
Soda: Bicarbonatc, p.cwt.	14	0	..	14	6	15	9	..	0	0
Carbonate:										
Soda Ash ..per deg.	0	2⅛	..	0	0	0	2¼	..	0	0
Soda Crystals per ton	100	0	..	0	0	102	6	..	0	0
Hyposulphite, per cwt.	0	0	..	0	0	0	0	..	0	0
Nitrate ......per cwt.	12	6	..	12	9	11	9	..	12	0
SUGAR OF LEAD, White cwt.	42	0	..	44	0	47	0	..	48	0
SUGAR OF LEAD, Brown, cwt.	32	0	..	33	0	32	6	..	33	0
SULPHUR (*see* Brimstone)										

	1875.					1874.				
	s.	d.		s.	d.	s.	d.		s.	d.
VERDIGRIS .... per lb.	1	1	to	1	5	1	1½	to	1	6
VERMILION, English ,,	4	1	..	0	0	5	4	..	5	6
China ,,	0	0	..	0	0	5	0	..	0	0

DRUGS.

	s.	d.		s.	d.	s.	d.		s.	d.
ALOES, Hepatic ....per cwt.	60	0	..	180	0	80	0	..	200	0
Socotrine .. ,,	90	0	..	200	0	105	0	..	300	0
Cape, good.. ,,	34	0	..	35	0	38	0	..	40	0
Inferior .... ,,	26	0	..	33	0	25	0	..	37	0
Barbadoes .. ,,	40	0	..	180	0	65	0	..	200	0
AMBERGRIS, grey........oz.	70	0	..	90	0	0	0	..	0	0
BALSAM—										
Canada............per lb.	1	9	..	0	0	2	8	..	2	10
Capivi .... ,,	2	9	..	2	10	2	8	..	0	0
Peru .... ,,	6	3	..	6	4	8	1	..	0	0
Tolu.............. ,,	5	9	..	6	0	2	4	..	2	6
BARKS—										
Canella alba......per cwt.	16	0	..	27	0	12	0	..	24	0
Cascarilla .... ,,	19	0	..	22	0	25	0	..	30	0
Peru, crown & grey per lb.	0	9	..	2	5	0	10	..	2	5
Calisaya, flat ,,	2	11	..	3	7	2	10	..	4	0
,, quill ,,	2	11	..	4	0	2	8	..	4	0
Carthagena ,,	0	6	..	1	8	0	9	..	2	0
E. I. .... ,,	1	3	..	3	6	0	6	..	4	0
Pitayo ...... ,,	0	4	..	2	0	0	6	..	2	0
Red .... ,,	1	0	..	4	0	1	7	..	3	10
Buchu Leaves........ ,,	0	2	..	1	1	0	2	..	1	0
CAMPHOR, China ..per cwt.	60	0	..	70	0	80	0	..	82	6
Japan .. ,,	0	0	..	0	0	85	0	..	87	6
Refin. Eng. per lb.	1	1	..	0	0	1	2½	..	0	0
CANTHARIDES........ ,,	2	9	..	3	6	2	3	..	5	0
CHAMOMILE FLOWERS p. cwt.	35	0	..	57	0	30	0	..	68	0
CASTOREUM ....per lb.	6	0	..	24	0	4	0	..	20	0
DRAGON'S BLOOD, lp. p. cwt.	80	0	..	220	0	100	0	..	250	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices).										
Anise, China Star per cwt.	110	0	..	112	6	110	0	..	115	0
Spanish, &c. ,,	30	0	..	35	0	12	0	..	27	0
Beans, Tonquin....per lb.	1	8	..	3	0	1	6	..	2	4
Cardamoms, Malabar good .... ,,	3	6	..	5	0	4	6	..	5	0
inferior.... ,,	2	0	..	3	5	2	3	..	4	0
Madras.... ,,	2	9	..	4	0	2	0	..	3	9
Ceylon .... ,,	5	8	..	5	10	4	6	..	4	10
Cassia Fistula....per cwt.	12	6	..	15	0	12	0	..	18	0
Castor Seeds .... ,,	10	0	..	10	6	5	0	..	10	0
Cocculus Indicus ,,	17	0	..	18	0	14	0	..	15	0
Colocynth, apple ..per lb.	0	11	..	1	0	0	4	..	0	10
Croton Seeds ....per cwt.	41	0	..	0	0	43	0	..	53	0
Cubebs.......... ,,	26	6	..	28	0	23	0	..	25	0
Cummin .... ,,	15	0	..	20	0	15	0	..	22	0
Dividivi .... ,,	11	0	..	17	0	11	0	..	15	0
Fenugreek ...... ,,	8	0	..	16	0	8	0	..	16	0
Guinea Grains .. ,,	22	0	..	0	0	26	0	..	0	0
Juniper Berries ,,	9	0	..	10	6	9	0	..	10	6
Nux Vomica.. .. ,,	12	0	..	17	0	8	0	..	15	0
Tamarinds, East India,,	18	0	..	40	0	10	0	..	12	0
West India ,,	16	0	..	22	0	14	0	..	28	0
Vanilla, large .... per lb.	60	0	..	72	0	68	0	..	86	0
inferior ,,	50	0	..	59	0	45	0	..	67	0
Wormseed per cwt.	0	0	..	0	0	0	0	..	0	0
GINGER, Preserved, per lb.	0	6	..	0	7	0	7	..	0	9
HONEY, Chili .... per cwt.	40	0	..	54	0	32	0	..	50	0
Jamaica ,,	36	0	..	47	0	40	0	..	50	0
Australian ,,	0	0	..	0	0	38	0	..	48	0
IPECACUANHA .... per lb.	4	3	..	4	8	2	10	..	3	4
ISINGLASS, Brazil.. ,,	3	0	..	5	0	3	4	..	5	0
Tongue sort ,,	3	0	..	5	10	3	6	..	5	6
East India ,,	1	0	..	5	1	2	0	..	5	4
West India ,,	4	8	..	5	2	4	2	..	4	11
Russ. long staple	13	0	..	16	0	8	6	..	12	6
,, inferior	0	0	..	0	0	4	0	..	8	0
,, Simovia	3	0	..	4	0	3	6	..	5	0
JALAP, good...... ,,	0	8½	..	0	10	1	0	..	1	1
infer. & stems ,,	0	5	..	0	8¼	0	10	..	0	11
LEMON JUICE .... per degree	0	2	..	0	2¼	0	2¾	..	0	0
LIME JUICE........per gall.	1	9	..	2	0	2	6	..	2	9
LIQUORICE, Spanish per cwt.	40	0	..	70	0	40	0	..	70	0
Liquorice Root ,,	20	0	..	31	0	11	0	..	16	0
MANNA, flaky ......per lb.	4	6	..	5	6	2	6	..	3	0
small ...... ,,	1	6	..	1	9	1	2	..	1	5
MUSK, Pod..........per oz.	17	0	..	47	6	18	0	..	40	0
Grain........ ,,	40	0	..	55	0	45	0	..	52	0
OILS (*see also separate list*)										
Almond, expressed per lb.	1	3	..	0	0	0	11	..	0	0
Castor, 1st pale.... ,,	0	5	..	0	0	0	0	..	0	0
second .... ,,	0	3¾	..	0	4	0	5	..	0	5¼
infer. & dark ,,	0	3½	..	0	0	0	4	..	0	5
Cod Liver ...... per gall.	5	6	..	7	9	3	9	..	5	6
Croton .... per oz.	0	2½	..	0	0	0	3	..	0	4
Essential Oils:										
Almond ....per lb.	30	0	..	0	0	25	0	..	0	0
Anise-seed ...... ,,	9	3	..	9	6	9	0	..	0	0
Bay ....per cwt.	0	0	..	0	0	65	0	..	70	0
Bergamot ...... per lb.	10	0	..	25	0	10	0	..	24	0
Cajeput......per bottle	2	4	..	2	8	2	3	..	2	5
Caraway........per lb.	9	0	..	0	0	5	3	..	6	0
Cassia.......... ,,	4	4	..	4	5	4	6	..	4	9
Cinnamon ......per oz.	1	0	..	6	6	0	8	..	6	0
Cinnamon-leaf .. ,,	0	2	..	0	3	0	2⅛	..	0	5
Citronelle ...... ,,	0	1¾	..	0	0	0	1⅞	..	0	0
Clove ....per lb.	10	3	..	10	9	8	9	..	0	0
Juniper .... ,,	1	10	..	2	0	1	3	..	2	4
Lavender ......per lb.	2	0	..	5	6	1	10	..	5	0
Lemon.......... ,,	7	0	..	11	0	7	0	..	14	0

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Essential Oils, *continued*:—	*s. d.*		*s. d.*	*s. d.*		*s. d.*
Lemongrass ....per oz.	0 2½	..	0 0	0 2¾	..	0 0
Neroli .... ,,	0 4	..	3 0	0 4	..	0 6
Nutmeg .... ,,	0 6¾	..	0 7½	0 7	..	0 8
Orange..........per lb.	6 0	..	9 0	8 0	..	10 0
Otto of Roses....per oz.	13 0	..	25 0	15 0	..	22 0
Patchouli ...... ,,	2 9	..	4 0	3 6	..	4 0
Peppermint:						
American ....per lb.	22 6	..	23 6	20 6	..	22 6
English ...... ,,	35 0	..	36 0	29 0	..	32 0
Rosemary ...... ,,	1 4	..	1 10	1 4	..	1 10
Sassafras ...... ,,	2 3	..	2 6	2 3	..	3 0
Spearmint ...... ,,	12 0	..	19 0	6 0	..	18 0
Thyme.......... ,,	1 9	..	2 0	1 9	..	2 0
Mace, expressed ..per oz.	0 7½	..	0 10	0 3	..	0 3½
Opium, Turkey ......per lb.	38 6	..	42 0	26 0	..	28 0
inferior ...... ,,	22 0	..	35 0	11 0	..	24 0
Quassia (bitter wood) per ton	160 0	..	315 0	70 0	..	85 0
Rhubarb, China, good and fine ....per lb.	2 0	..	4 6	2 9	..	5 0
Good, mid. to ord. ,,	0 8	..	1 10	0 8	..	2 7
Dutch trimmed ,,	0 0	..	0 0	0 0	..	0 0
Russian .... ,,	0 0	..	0 0	0 0	..	0 0
ROOTS—Calumba..per cwt.	20 0	..	30 0	8 0	..	18 0
China .... ,,	18 0	..	20 0	18 0	..	24 0
Galangal.......... ,,	21 0	..	26 0	23 0	..	24 0
Gentian .... ,,	23 0	..	24 0	17 0	..	20 0
Hellebore .... ,,	30 0	..	33 0	30 0	..	33 0
Orris .... ,,	26 0	..	75 0	30 0	..	70 0
Pellitory.......... ,,	38 0	..	39 0	38 0	..	39 0
Pink..............per lb.	0 10	..	1 3	1 0	..	1 3
Rhatany.......... ,,	0 4	..	2 0	0 5	..	0 11
Seneka............ ,,	3 2	..	3 7	3 0	..	3 6
Snake .... ,,	0 10	..	1 0	1 4	..	1 9
Saffron, Spanish .. ,,	18 0	..	23 0	24 0	..	28 0
Salep ....per cwt.	0 0	..	0 0	170 0	..	200 0
Sarsaparilla, Lima per lb.	0 6	..	0 8	0 6	..	0 9
Para.............. ,,	0 0	..	0 0	1 0	..	1 3
Honduras .... ,,	1 4	..	2 0	1 3	..	1 7
Jamaica .... ,,	2 3	..	2 9	1 5	..	2 3
Sassafras ....per cwt.	0 0	..	0 0	13 0	..	15 0
Scammony, Virgin ..per lb.	25 0	..	36 0	25 0	..	30 0
second & ordinary ,,	7 0	..	24 0	8 0	..	24 0
Senna, Bombay .... ,,	0 1	..	0 4	0 1	..	0 5
Tinnivelly .... ,,	0 1	..	0 8	0 1½	..	1 0
Alexandria .... ,,	0 6	..	2 6	0 4	..	1 5
Spermaceti, refined ,,	1 3	..	0 0	1 3	..	1 4
American .... ,,	1 1	..	1 2	1 0	..	1 1
Squills............ ,,	0 4	..	0 5	0 1½	..	0 2
GUMS.	*£ s.*		*£ s.*	*£ s.*		*£ s.*
Ammoniaci drop .. per cwt.	3 4	..	4 0	3 0	..	3 5
lump.. ,,	3 0	..	4 0	2 0	..	3 15
Animi, fine washed ,,	11 10	..	13 10	12 0	..	13 10
bold scraped ,,	10 0	..	11 7/6	11 0	..	11 15
sorts ...... ,,	6 10	..	10 10	6 0	..	11 0
dark ...... ,,	4 10	..	5 10	4 0	..	5 15
Arabic, E.I., fine pale picked .. ,,	2 15	..	3 15	3 0	..	3 10
srts.,md.tofin. ,,	1 13	..	2 15	2 0	..	2 18
garblings .. ,,	0 19	..	2 0	1 0	..	2 0
Turkey, pick.gd.to fin. ,,	7 0	..	11 0	7 10	..	11 0
second & inf. ,,	3 0	..	6 18	4 0	..	7 0
in sorts .. ,,	1 10	..	2 15	2 10	..	3 15
Gedda .... ,,	1 0	..	1 4	1 10	..	1 15
Barbary, white .. ,,	1 10	..	1 15	1 10	..	2 5
brown .. ,,	1 6	..	1 12	1 6	..	2 0
Australian...... ,,	1 10	..	2 8	1 8	..	2 8
Assafœtida, cm. to fin ,,	12 0	..	2 0	1 6	..	2 10
Benjamin, 1st & 2nd ,,	20 0	..	30 0	10 0	..	28 0
Sumatra 1st & 2nd ,,	7 10	..	12 10	7 10	..	12 0
3rd	3 17/6	..	4 7/6	3 10	..	4 0
Copal, Angola red ,,	5 10	..	6 15	5 10	..	6 0
Benguela ,,	4 0	..	5 0	5 0	..	5 10
	s. d.		*s. d.*	*s. d.*		*s. d.*
Sierra Leone, per lb.	0 10	..	1 2	0 4	..	0 10
Manilla....per cwt.	25 0	..	36 0	15 0	..	23 0
Dammar, pale .... ,,	58 0	..	62 0	41 0	..	50 0
Singapore .... ,,	58 0	..	62 0	41 0	..	50 0
Euphorbium .... ,,	11 0	..	20 0	11 0	..	15 0
Galbanum .... per lb.	0 11	..	1 6	1 6	..	2 0
Gamboge, pckd. pipe per cwt.	195 0	..	380 0	210 0	..	280 0
Guaiacum ....per lb.	0 8	..	2 6	1 0	..	2 10
Kino..............per cwt.	60 0	..	90 0	50 0	..	80 0
Kowrie, rough .. ,,	40 0	..	60 0	20 0	..	35 0
scraped sorts ,,	61 0	..	78 0	31 0	..	52 6
Mastic, picked ....per lb.	4 6	..	6 0	5 0	..	6 0
Myrrh, gd. & fine per cwt.	119 0	..	250 0	120 0	..	240 0
ord. to fair.... ,,	72 0	..	115 0	70 0	..	110 0
Olibanum, p. drop ,,	52 0	..	60 0	50 0	..	70 0
amber & ylw. ,,	43 0	..	51 0	60 0	..	65 0
garblings.... ,,	22 0	..	33 0	22 0	..	37 0
Senegal .... ,,	2 0	..	2 5	3 0	..	3 5
Sandarac........ ,,	90 0	..	105 0	80 0	..	105 0
Shellac, Orange.. ,,	240 0	..	295 0	240 0	..	275 0
Liver .. ,,	220 0	..	255 0	220 0	..	235 0
Thus .... ,,	20 0	..	23 0	23 0	..	24 0
Tragacanth, leaf ,,	200 0	..	390 0	260 0	..	400 0
in sorts ,,	30 0	..	195 0	30 0	..	170 0
OILS.	*£ s.*		*£ s.*	*£ s.*		*£ s.*
Seal, pale ....per tun	36 0	..	0 0	37 0	..	0 0
yellow to tinged ,,	33 0	..	35 10	32 0	..	36 0
brown ...... ,,	30 0	..	32 0	30 0	..	32 0
Sperm............ ,,	110 0	..	0 0	104 0	..	0 0
Cod .... ,,	42 10	..	43 0	40 0	..	40 10

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Oils, *continued*:—	*£ s.*		*£ s.*	*£ s.*		*£ s.*
Whale, South Sea, pale, per tun	35 0	to	36 0	33 0	to	0 0
yellow ,,	32 0	..	34 10	31 10	..	32 0
brown ,,	29 0	..	30 0	30 0	..	31 0
East India, Fish ,,	25 0	..	25 10	25 10	..	0 0
Olive, Galipoli....per ton	0 0	..	0 0	45 0	..	0 0
Trieste...... ,,	42 10	..	0 0	44 0	..	0 0
Levant .... ,,	41 0	..	41 5	35 0	..	0 0
Mogador .... ,,	39 15	..	40 0	37 10	..	0 0
Spanish .... ,,	0 0	..	0 0	40 0	..	40 10
Sicily ...... ,,	0 0	..	0 0	40 0	..	0 0
Cocoanut, Cochin.. ,,	43 10	..	44 0	31 10	..	39 0
Ceylon ,,	37 10	..	37 15	35 0	..	0 0
Sydney ,,	37 10	..	0 0	30 0	..	35 0
Ground Nut and Gingelly:						
Bombay	0 0	..	0 0	0 0	..	0 0
Madras	34 10	..	0 0	35 10	..	36 0
Palm, fine................	34 10	..	0 0	34 15	..	35 0
Linseed..................	25 10	..	0 0	0 0	..	0 0
Rapeseed, English, pale ..	31 15	..	32 0	32 0	..	0 0
brown	29 15	..	30 0	29 10	..	0 0
Foreign, pale ..	33 0	..	0 0	34 0	..	0 0
brown	0 0	..	0 0	0 0	..	0 0
Cottonseed..............	26 15	..	27 0	25 10	..	26 0
Lard	71 0	..	0 0	48 0	..	49 0
Tallow	23 0	..	28 0	26 0	..	32 0
Turpentine, American, cks.	24 9	..	0 0	29 9	..	30 0
French ,,	0 0	..	0 0	29 6	..	0 0
Petroleum, Crude	0 0	..	0 0	0 0	..	0 0
	s. d.		*s. d.*	*s. d.*		*s. d.*
refined, per gall.	0 9	..	0 9½	0 11½	..	0 0
Spirit ,,	0 8¾	..	0 9	0 9¾	..	0 0
SEEDS.						
Canary............per qr.	250 0	..	300 0	60 0	..	66 0
Caraway, English per cwt.	0 0	..	0 0	0 0	..	0 0
German, &c....	25 0	..	46 0	0 0	..	0 0
Coriander	8 0	..	18 0	10 0	..	13 0
Hemp..............per qr.	36 0	..	42 0	40 0	..	44 0
Linseed, English per qr. ..	0 0	..	0 0	0 0	..	0 0
Black Sea & Azof	55 6	..	56 0	59 0	..	0 0
Calcutta ,,	59 0	..	60 0	62 0	..	0 0
Bombay ,,	60 0	..	60 0	63 0	..	0 0
St. Petrsbrg. ,,	0 0	..	0 0	56 0	..	57 0
Mustard, brown..per bshl.	0 0	..	0 0	10 0	..	15 0
white.. ,,	7 0	..	12 0	8 0	..	11 0
Poppy, East India, per qr.	47 0	..	0 0	52 6	..	0 0
SPICES.						
Cassia Lignea ..per cwt.	55 0	..	75 0	63 0	..	70 0
Vera .... ,,	24 0	..	50 0	24 0	..	60 0
Buds .... ,,	110 0	..	0 0	115 0	..	117 6
Cinnamon, Ceylon:						
1st quality ......per lb.	2 9	..	4 6	2 4	..	4 0
2nd do. .... ,,	2 1	..	3 7	2 0	..	3 3
3rd do. .... ,,	1 8	..	2 10	1 6	..	3 0
Tellicherry ...... ,,	3 0	..	3 5	0 0	..	0 0
Cloves, Penang .... ,,	1 8	..	1 9	1 7	..	1 8
Amboyna .... ,,	1 5	..	1 6	1 3	..	1 4
Zanzibar.......... ,,	1 4	..	1 5	1 3	..	0 0
Ginger, Jam., fine per cwt.	95 0	..	200 0	110 0	..	250 0
Ord. to good .... ,,	75 0	..	100 0	66 0	..	100 0
African .... ,,	58 0	..	0 0	60 0	..	0 0
Bengal............ ,,	48 0	..	55 0	53 0	..	0 0
Malabar .... ,,	50 0	..	0 0	50 0	..	0 0
Cochin .... ,,	79 0	..	127 6	70 0	..	120 0
Pepper, Blk, Malabar, per lb	0 6⅝	..	0 7½	0 8	..	0 8¼
Singapore .... ,,	0 6	..	0 0	0 5½	..	0 0
White Tellicherry ,,	0 11	..	1 5	1 6	..	1 10
Cayenne.......... ,,	1 6	..	3 0	1 3	..	1 8
Mace, 1st quality .. ,,	3 0	..	3 7	3 6	..	4 0
2nd and inferior .. ,,	1 7	..	2 11	2 11	..	3 5
Nutmegs, 78 to 60 to lb.	3 3	..	4 4	3 4	..	4 7
90 to 80 ,,	2 9	..	3 6	3 1	..	3 3
132 to 95 ,,	2 11	..	3 3	2 6	..	3 0
Pimenta	0 3	..	0 0	0 2¾	..	0 3
VARIOUS PRODUCTS						
COCHINEAL—						
Honduras, black ..per lb.	1 9	..	2 9	2 1	..	3 0
,, silver .. ,,	1 8	..	2 0	2 1	..	2 4
,, pasty .. ,,	1 6	..	1 7	1 9	..	2 0
Mexican, black .... ,,	1 8	..	1 10	2 2	..	2 4
,, silver.... ,,	1 7	..	0 0	1 11	..	2 0
Teneriffe, black .. ,,	1 8	..	3 4	2 1	..	3 10
,, silver .. ,,	1 7	..	1 11	2 0	..	2 2
SOAP, Castile......per cwt.	26 0	..	33 0	33 0	..	34 0
SPONGE, Turk.fin.pkd pr lb.	12 0	..	16 0	12 0	..	16 0
Fair to good ,,	4 0	..	11 0	4 0	..	11 0
Ordinary .. ,,	1 0	..	3 6	1 0	..	3 6
Bahama .... ,,	0 6	..	3 0	0 6	..	3 6
TERRA JAPONICA—						
Gambier ......per cwt.	25 3	..	25 6	24 9	..	0 0
Free cubes .... ,,	40 0	..	42 0	33 0	..	37 0
Cutch .... ,,	23 6	..	24 6	22 0	..	22 9
WOOD, Dye, Bar ..per ton	£4 10	..	£5 0	0 0	..	0 0
Brazil, Branch .... ,,	18 0	..	27 0	20 0	..	26 0
,, Logs ...... ,,	9 0	..	16 0	9 0	..	18 0
Cam.............. ,,	28 0	..	42 0	21 0	..	32 0
Fustic, Cuba ...... ,,	9 10	..	9 15	9 0	..	9 10
Jamaica .... ,,	8 0	..	8 10	6 0	..	7 0
Logwood, Campeachy ,,	9 0	..	0 0	9 0	..	9 10
Honduras ...... ,,	7 0	..	7 10	6 10	..	6 15
St. Domingo .... ,,	6 0	..	6 10	5 2/6	..	5 10
Jamaica .... ,,	6 7/6	..	6 10	5 0	..	5 10
Lima, first pile .... ,,	11 0	..	12 0	12 10	..	14 0
Red Sanders .... ,,	6 0	..	6 2/6	7 0	..	0 0

NOTES AND QUERIES

CORRESPONDENTS will please observe that the Editor cannot undertake to send private replies to the class of queries which are answered in this page. He will be much obliged if readers will communicate items for this department as well as draw from it. All communications should give (in confidence) the name and address of the writer, though any *nom de plume* may be adopted. No query can be attended to in the current month which reaches this office after the 10th.

Pickering.—There is no legal obstacle to a registered chemist and druggist carrying on a dozen businesses if he choose, nor need he in any one of them employ a qualified assistant. Of course the law recognises him, the registered chemist, as the only responsible person in the event of any accident.

R. T.—Soluble garnet is the ammonia salt of isopurpuric acid, which is formed by the action of a metallic cyanide upon picric acid. The colours produced are like those obtained from archil, but more permanent. The dyeing is effected by the addition of an organic acid, such as tartaric or acetic acid to the bath, mineral acids being excluded.

Metropolis.—The asphalte pavement in Cheapside is laid down by the Val de Travers Company according to the following process :—A foundation is first made of Portland cement concrete, 8 inches thick, on the top of which a coating of mastic about half an inch in thickness is run and worked to the proper slopes and curvatures. The asphalte is laid on this foundation. It is brought from Switzerland, and is entirely composed of the natural rock ground to a powder, and subjected in that state to great heat in a revolving boiler on the spot. After this it is taken out, laid over the surface, and, while in its heated state, compressed with burning irons into one homogeneous mass, without joints and impervious to moisture. The asphalte is about 2 inches thick, and when finished presents a wonderfully smooth and level surface. The cost is about 18*s.* per square yard, including the foundation, and 1*s.* 6*d.* per square yard was the estimated annual expense of keeping it in repair.

A correspondent at Bradford sends us a letter which appeared in the *Manchester Examiner* of May 8 over the signature of "R. B.," in which the writer strongly urges druggists to practise prescribing to the utmost extent. He points out that a druggist may, as well as a surgeon, give a statement to the registrar of the disease which was the cause of death; and he is correct in this. For that matter, indeed, anybody may give such particulars, but the registrar may or may not receive them. We need hardly say that we fully agree with our correspondent in regarding this extensive prescribing business as most illegitimate and reprehensible; so long as chemists and druggists confine themselves to recommending medicines in ordinary simple disorders, the sympathy of the public will be with them in any dispute on this point with the medical profession. But the trade would deservedly lose all respect if, trading on the ignorance of the public, its members tried to usurp the profits of medical practice without going through the long curriculum of medical training.

F. W. asks how to prevent the falling out of shape and running together of pills containing :

Hyd. chlor.
Pulv. pro. Ext. Col. Co.
Scammon. Resin
Ext. Hyos
Ol. Anthem.
With Proof Spirit as an Excipient.

He finds that unless made as hard as bullets they will not keep their shape, even if buried in *P. Amyli.* Perhaps the simplest way out of the difficulty would be to make the pills "as hard as bullets." Or possibly some pharmaceutical reader can suggest a more excellent way.

A Subscriber in Cape Colony writes to us in reference to the manner in which a certain wholesale house in London treats export orders. Our correspondent, who is a retail chemist, sends a 40*l.* or 50*l.* order every few months, and he says it is often kept in hand for over two months. He asks if this is the usual style of wholesale houses here, as he fears lest in changing he might go further and fare worse. He does not name the house to which he alludes, but we should certainly advise him to risk a change. Our advertising pages offer him a wide field of choice.

W. T. (Durham).—Neither hellebore nor cocculus indicus are in the schedule of the Pharmacy Act, and therefore as far as that is concerned the sale of these substances is not restricted. But, by another Act, a very heavy penalty attaches to a chemist selling the latter to a brewer.

H. R.—*Carbolate of Iodine* is the familiar name for either of the iodine substitution compounds of carbolic acid, viz., *mono-iodophenol* and *di-iodophenol*, of which the formulæ are C_6H_3—10 and $C_6H_4I_2O$ respectively. They are obtained by the action of chloride of iodine on phenol (carbolic acid). They are colourless bodies, insoluble in water, but soluble in alcohol, ether and alkalies. We do not believe that either is an article of manufacture. A full account of them will be found in a paper by Schutzenberger & Sengenwald, Compt rend. liv., 197.

Vermin Killer.—Messrs. W. J. and T. Reade, of Wolverhampton, were recently fined 1*l.*, with 2*l.* 1*s.* costs, for selling a packet of vermin killer without entering the *address* of the purchaser in the poison book. The schedule of the Pharmacy Act gives a form for said poison book, but shows no space for address of purchaser. In the 17th section of the Act, however, it is stipulated that the address as well as the name shall be entered. Evidently the omission in the schedule is a blunder. On this case X. L. writes to us :—

"I cannot see how Messrs. Reade could be legally fined for not properly registering this sale, for by the Pharmacy Act, as revised and published in the *London Gazette* of December 21, 1869, vermin killers are there named in Part 2 of Schedule A, and described as '*every compound* containing *any* poison, &c. It is well known the poisons named in this part require only to be labelled with the name of the article and name and address of the seller; and it distinctly states, need *not* be *registered*. If it is required to register the sale of these, the matter ought at once to be set right by having vermin killers moved into Part 1 of Schedule A."

We cannot agree with our correspondent. Vermin killers containing strychnine, or any poison in Part 1 of Schedule A, should undoubtedly follow the regulations of Part 1. It would not be desirable, however, that all vermin killers should be included in this section; but it is very desirable that the sale of all of them should be confined to registered chemists. This is accomplished by the insertion of the title in Part 2 of the Schedule. Grocers and oilmen selling vermin killers should be warned, and if they continue should be prosecuted.

Harry asks "will any correspondent kindly tell me the best (and cheapest) way to strain and bottle sauce ?"

Chemist.—*Furniture Cream.*—

Pearlash, 2 oz.
Soft soap, 4 oz.
Bees' wax, 1 lb.
Water, 1 gallon.

Boil until the whole is combined and forms a creamy liquid when cold.

Scruple.—The tinct. of logwood for Horsley's test for alum in bread should be made with 1 oz. of logwood and 1 pint of proof spirit, digested a week and filtered. The carbonate of ammonia solution, about 3 ozs. of the carbonate to a pint of water. In examining a number of samples of bread, each piece should be put in a separate dish or beaker, with just sufficient of the dilute logwood and ammonia solution to cover them. (Equal parts logwood and solution, and 8 parts water.) Let them stay in the liquid five minutes, then drain and dry.

Scruple sends the following in reply to a query inserted last issue :—

"*Troches* can get his stamps cast in type-metal to order by any wood engraver who can "stereo," and a practical brazier or ironmonger would mount them, and supply cutter, handle, &c. It is advisable to have a stock of stumps for replacing worn ones, as the lettering quickly loses its sharpness of outline, and ultimately is effaced. For plain lozenges, a truncated tin cone, length about 4 inches, diameter at base, 1½ inch, the smaller end soldered or brazed to an iron or steel cylinder, ½ inch in length, and the diameter of the lozenge, ground to a blunt edge, is sufficient, and can be made for about 1*s.* or 1*s.* 6*d.*"

Will some one give *Scruple* the formula for Magg's oils.

A New Way to Spell Cayenne.—*J. L. G.* (*Iowa*) forwards to the American *Druggists' Circular* a number of prescriptions written by a botanic doctor, who, he says, has practised in his town for twenty years. These documents, so far as chirography and spelling are concerned, are somewhat below the average; yet they compare favourably with many that we and most druggists have seen frequently. But there is one point which cannot be passed without notice—that is, the way of spelling, or rather contracting, the word cayenne. "*Cian*" is the abbreviation! It may be well to remember it, for nobody knows when the occasion may present itself of using such knowledge. Another contracted spelling which we have seen once may also be added to the foregoing, it is "*y*ld cherry" for wild cherry. The writer showed in his orthography a sublime faith in the power of the vowel *y*.

M. H. A.—*Violet Powder.*—Powdered starch or potato farina 28 lbs. orris powder 1 lb. This will require about an ounce of perfume, varying according to fancy. A mixture of ambergris and bergamot, with a little musk, is a favourite odour, and some makers add a few drops of oil of rhodium. The powder should be sifted. Fuller's earth powder is prepared by throwing the earth into water, and afterwards well washing the resulting powder.

RICHARDSON'S COATED PILLS.

SPECIAL ADVANTAGES.

They never crack or split.
The coating does not peel off.
They never become discoloured.

SPECIAL ADVANTAGES.

They are perfectly tasteless.
They are perfectly soluble.
They are moderate in price.

Prepared with the greatest care from the purest Drugs, and under personal supervision.

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R. M. Bowstead, Esq., M.D., High Wycomb.—"Superior to any other I have used."

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W. D. Spanton, Esq., M.R.C.S., Hanley.—"Everything that can be desired, speedy sclubility, and keep well."

J. B. Hughes, Esq., M.R.C.S., Macclesfield.—"Can speak most highly of their purity."

J. H. Casson, Esq., M.R.C.S., Ashbourne.—"Great pleasure in bearing testimony to the great excellence of your Coated Pills, most certain in their various actions."

J. Stewart, Esq., M.D., Pencaitland.—"Very reliable, keep well, elegant, and perfectly tasteless."

P. Belcher, Esq., L.R.C.P., Burton.—"Easily soluble, retaining their active properties for a very long time."

M. O'Connor, Esq., I.R.Q.C.P., Chatteris.—"Perfectly satisfied with their purity and efficiency; elegant, and quite soluble."

H. W. Fagge, Esq., M.R C.S., Lutterworth.—"Action uniform, perfectly soluble, correctly and faithfully compounded."

COLONIAL TESTIMONIALS.

Melbourne, Australia, Feb. 25, 1875.—Gentlemen,—We have opened the case ex *Wimmera*, and are very much pleased with the quality of the goods sent. The Coated Pills are first class, and very saleable.—Yours, very truly, HOOD & Co."

Melbourne, Australia, Feb. 25, 1875.—"Gentlemen,—The Coated Pills, on arrival in Melbourne, were in first-class condition.—Yours truly, D. E. MORRISON."

Just Published, Fourth Edition of our **PRICE LIST** of **SOLUBLE PEARL-COATED PILLS,** containing upwards of FIVE HUNDRED Formulæ, Testimonials, &c. Free on application.
Special attention is paid to the packing of Orders for India, China, Japan, and the Colonies.

CAUTION.—The great demand for our Soluble Pearl-coated Pills has caused many systematic imitations. The Profession is earnestly requested, if ordering through Wholesale Houses, to state distinctly that our Preparations are wanted. We would also respectfully urge Physicians and others who may prescribe our remedies to write our name "**RICHARDSON**" against the forms indicated.

JOHN RICHARDSON & CO., Manufacturing Pharmaceutical Chemists, **LEICESTER.**
MIDLAND COUNTIES STEAM LABORATORY. ESTABLISHED A.D. 1793.

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Manufacturing and Export Homœopathic Chemist,
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PRICE LIST ON APPLICATION.

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ST. PETER'S, BRISTOL.

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2 oz.	9s. per gross.	½ oz. Phial	5s. per gross
3 and 4 oz.	10s. ,,	1 oz. ,,	6s. ,,
6 and 8 oz.	11s. ,,	1½oz. ,,	6s. 6d. ,,
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6 ,, 8 ,, ,, ,,	11s. 0d. ,,	1½ ,, ,, ,, ,,	6s. 6d. ,,
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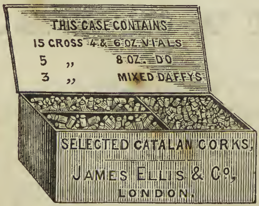

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	Same qualities as Nos. 2 and 4.	
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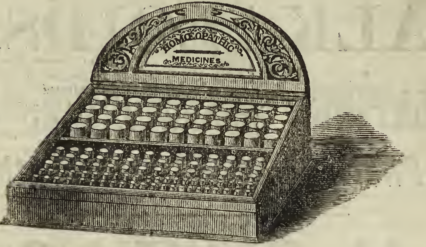

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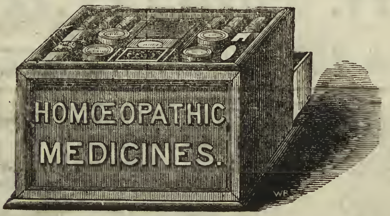

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